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AN ANALYSIS OF THE MARINE CORPS' ORGANIZATIONAL FITNESS FOR PEAK PERFORMANCE IN THE FUTURE OPERATING ENVIRONMENT

by

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The future operating environment, as discussed in the Marine Corps Operating concept, is characterized by friction, uncertainty, and information warfare at all levels. The Marine Corps conducted an initial reorganization of the Marine Expeditionary Force Command Element (MEF CE) to adapt to this change. This research analyzes whether the MEF CE is now organized properly to operate with peak performance in the future operating environment. To determine this, the research includes an analysis of Marine Corps doctrine and concepts and a survey and semi-structured interviews of Marine Corps personnel, which serve to provide input into two tools used for further analysis: Organizational Consultant (ORGCON) and the Star Model. Both tools assist with a rigorous analysis of the MEF CE's organizational fitness and led to the conclusion that while the initial reorganization of the MEF CE is positive, it requires further refinement. This thesis recommends six organizational design adjustments at both the MEF CE and Marine Corps levels. These recommendations are meant to focus and inform future research and experimentation as the MEF CE and Marine Corps continue to adapt the force to its future operating environment.

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AN ANALYSIS OF THE MARINE CORPS' ORGANIZATIONAL FITNESS FOR PEAK PERFORMANCE IN THE FUTURE OPERATING ENVIRONMENT

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The future operating environment, as discussed in the Marine Corps Operating concept, is characterized by friction, uncertainty, and information warfare at all levels. The Marine Corps conducted an initial reorganization of the Marine Expeditionary Force Command Element (MEF CE) to adapt to this change. This research analyzes whether the MEF CE is now organized properly to operate with peak performance in the future operating environment. To determine this, the research includes an analysis of Marine Corps doctrine and concepts and a survey and semi-structured interviews of Marine Corps personnel, which serve to provide input into two tools used for further analysis: Organizational Consultant (ORGCON) and the Star Model. Both tools assist with a rigorous analysis of the MEF CE's organizational fitness and led to the conclusion that while the initial reorganization of the MEF CE is positive, it requires further refinement. This thesis recommends six organizational design adjustments at both the MEF CE and Marine Corps levels. These recommendations are meant to focus and inform future research and experimentation as the MEF CE and Marine Corps continue to adapt the force to its future operating environment.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACE	Aviation Combat Element
ADCON	administrative control
ANGLICO	Air Naval Gunfire Liaison Company
AOI	area of influence
ATO	Air Tasking Order
CD&I	Deputy Commandant Combat Integration and Development
B2C2WGs	boards, bureaus, cells, centers, and working groups
C2	command and control
CE	Command Element
CG	Commanding General
CO	Commanding Officer
COA	course of action
COC	combat operations center
CONOP	concept of operations
COP	common operating picture
COPS	current operations
COMCON	communications control
COMSTRAT	communications strategy
CUB	Commander's Update Brief
CWO	Chief Warrant Officer
DC I	Deputy Commandant for Information
DCO	defensive cyberspace operations
DCO-IDM	defensive cyberspace operations – internal defense measures
DCO-RA	defensive cyberspace operations – response actions
DIRLAUTH	direct liaison authorized
DoD	Department of Defense
DODIN	Department of Defense Information Networks
EF 21	Expeditionary Force 21
EMS	electromagnetic spectrum
EMSO	electromagnetic spectrum operations

EW	electronic warfare
EWTGLANT	Expeditionary Warfare Training Group Atlantic
FECC	Fires and Effects Coordination Cell
FFCC	Force Fires Coordination Center
FOC	fully operations capable
FOPS	future operations
FRAGO	fragmentary order
GCE	Ground Combat Element
HR	human resources
IE	information environment
IEO	information environment operations
IO	information operations
IT	information technology
IOC	initial operations capable
IOC	Intelligence Operations Center
IPB	intelligence preparation of the battlespace
IRB	Institutional Review Board
IRCs	information-related capabilities
IWID	Information Warfare Integration Division
JCS	Joint Chiefs of Staff
LCE	Logistics Combat Element
LOC	Logistics Operations Center
MAGTF	Marine Air Ground Task Force
MAGTF IEO COE	Marine Air Ground Task Force Information Environment Operations Concept of Employment
MARFOR	Marine Forces
MCBUL	Marine Corps Bulletin
MCCC	MAGTF Communications Control Center
MCDP	Marine Corps Doctrinal Publication
MCIOC	Marine Corps Information Operations Command
MCIWTF	Marine Corps Information Warfare Task Force
MCRP	Marine Corps Reference Publication

MEF	Marine Expeditionary Force
MEF CE	Marine Expeditionary Force Command Element
MHG	Marine Expeditionary Force Headquarters Group
MIG	Marine Expeditionary Force Information Group
MILDEC	military deception
MISO	military information support operations
MOC	Marine Corps Operating Concept
MOE	measures of effectiveness
MOP	measures of performance
MOS	military occupational specialty
OCAC	Operation, Control, and Analysis Center
OCC	Operation in the Information Environment Control Cell
OCO	offensive cyberspace operations
OIE	operations in the information environment
OIC	officer-in-charge
OODA	observe, orient, decide, act
OPCON	operational control
ORGCON	Organizational Consultant
OPSO	operations officer
PME	professional military education
PP&O	Plans, Policies, and Operations
RAGM	Reactive Attack Guidance Matrix
SEP	Special Education Program
SOP	standing operating procedure
TACSOP	tactical standing operating procedure
TIO	Technical Information Operations
TNL	Target Nomination List
USMC	United States Marine Corps
VTC	video telephone conference

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I. INTRODUCTION

The information environment (IE) in today's world moves at great speeds. Russia's invasion in Georgia and Crimea demonstrated how synchronized efforts in this environment can tremendously affect the outcome of warfare (Haynes, 2016). It is imperative that the United States Marine Corps can compete in this environment now and in the future. To that end, the Marine Corps developed a new vision to operate "with freedom of action in and through the information environment to preserve, generate, and apply informational power in concert with fires and maneuver to accelerate tempo and achieve physical and cognitive advantage" (United States Marine Corps [USMC], 2017c, p. 2). As such, in July 2017, the Marine Corps directed a structural change designed to prepare the force for future warfare in the IE no later than 2025. What are the effects of this change? Does this new internal structure fit with the Marine Corps' overall goal to perform well in the IE? This thesis, endorsed by the Marine Corps' Deputy Commandant for Information (DC I), analyzes these questions through the framework of organizational design theory and an expert system based on structural contingency theory.

A. BACKGROUND

In 2014, after thirteen straight years of fighting wars in Afghanistan and Iraq, the Marine Corps shifted focus to the future operating environment. The Marine Corps determined that "with the pervasiveness of the internet and wireless communications, the far-reaching impact of social media, and the increasing use of these and other information capabilities by adversaries, today's IE poses new and complex challenges and opportunities for the Marine Air Ground Task Force" (USMC, 2017c, p. 1). The Marine Corps took steps to meet this future challenge in 2017 by restructuring the Marine Expeditionary Force (MEF). They created the MEF Information Group (MIG) as a new component of the MEF Command Element (CE); its focus is to integrate all operations in the information environment (OIE) along functional lines. The Marine Corps' goal was to increase coordination across the many internal entities responsible for aspects of the IE in order to achieve peak performance in the future operating environment.

However, the reorganization, designed to produce an external effect, has the potential to create significant internal conflict within the MEF CE, to include confusion regarding OIE task responsibility between multiple entities inside of the MEF CE. This confusion has the potential to generate a negative effect that hinders the desired overall gains that the reorganization was intended to produce. For example, no express relationship exists between the MEF Commanding General's staff and the MIG who now share responsibility for many of the functions in the IE. The MIG Commanding Officer is responsible to the MEF Commanding General to assure enterprise command and control systems (a function currently executed by the MEF G-6 under communications control doctrine) and also provide IE battlespace awareness (a function currently owned by the MEF G-2). Presently, incomplete and conflicting doctrine and staff regulations exist to reflect this newly organized configuration of the MEF CE.

The Marine Corps recognizes that the reorganization is not a finished product but a "starting point for experimentation, wargaming, and training exercises to discover and refine this capability in the coming years" (USMC, 2017c, p. 3). Unfortunately, experimentation comes at a price for the Marine Corps. Field and laboratory experimentation individually produce significant drawbacks such as cost, control, complexity, and timeliness that may delay the Marine Corps' refinement process. This thesis uses both organizational design theory and an expert system based on structural contingency theory to provide a framework for analyzing this potential problem to focus future experimentation and war gaming, thus enabling the Marine Corps to adapt its organization to the future operating environment at a less costly and more rapid pace.

B. PURPOSE

This thesis helps focus future Marine Corps experimentation, and thus reduce both timeline and cost, by analyzing the organization of the MEF CE using organizational design theory and an expert system based on structural contingency theory to determine its ability to obtain peak performance in the future operating environment. This research identifies key areas for refinement regarding structure, processes, and information flow at the MEF CE level and provides the Marine Corps recommendations for focused future

experimentation and change, which will ultimately assist the Marine Corps in achieving their intended results in the future operating environment.

C. THESIS ORGANIZATION

This thesis is organized into five chapters. This first chapter has introduced the future operating environment facing the Marine Corps. The chapter has explained how the Marine Corps reacted to changes in the future operating environment by directing a structural reorganization and how the initial reaction is a starting point for future research and change as the Marine Corps continues that adaptation.

Chapter II reviews literature regarding organizational design theory. The presentation focuses the reader on Galbraith's Star Model (2002) and Burton and Obel's Multi-Contingency Diagnosis and Design Model (2004), which provide the basis for the two organizational design frameworks used to frame this thesis. ORGCON (Burton and Obel, 2004) is introduced as an expert system used to identify mismatches in an organization's design that prohibit the organization from achieving its strategic goals.

Chapter III contains a review of relevant Marine Corps and MEF doctrine. The doctrine review focuses on maneuver warfare and combined arms theory, the organization of the MEF, command and control theory, and the fires and targeting processes used in the Marine Corps. Finally, I provide a discussion on information warfare and the Marine Corps' evolution in the IE. These topics scope the MEF CE as the focal unit of the Marine Corps that is analyzed during the course of this thesis.

Chapter IV presents the research methods used while conducting this research. The four primary research vehicles are: 1) an expert system based on structural contingency theory, 2) a Marine Corps survey, 3) a semi-structured interview process, and 4) an analysis based on Galbraith's Star Model. The chapter begins with a discussion of the structure of the ORGCON expert system. I walk the reader through my approach to obtain the proper inputs to the expert system to include a doctrine review and a survey of relevant USMC personnel to ensure the accuracy of the input data used to model the MEF CE. I then introduce the goals and methods of the semi-structured interviews of both personnel

currently serving in MEF CE billets and personnel assigned to institutional-level OIE billets. These interviews are then used to inform the Star Model analysis.

Chapter V provides an in-depth view and analysis of the results found from the ORGCON expert system. Inputs, to include the results of the survey data, are discussed. The outputs are then examined and analyzed using Marine Corps doctrine and organizational design theory as a lens.

Chapter VI describes the Star Model analysis using Marine Corps doctrine, the survey, and the semi-structured interview process as inputs. The analysis covers strategic goals, organizational structure, work processes, rewards, and people. Work processes relate directly to the interaction of organizational design and maneuver warfare, combined arms, the fires process, and command and control.

Chapter VII offers conclusions, recommendations, and opportunities for future research as a result of the analysis conducted during this research. The recommendations located in this section result from both methods of analysis and are meant to inform and focus organizations within the Marine Corps as they continue to adapt to the future operating environment.

II. ORGANIZATIONAL DESIGN THEORY LITERATURE REVIEW

This literature review addresses two related areas: organizational design theory and the ORGCON expert system. In both areas, this literature review defines key terms, ideas, and relationships and scopes the discussion for this thesis.

A. ORGANIZATIONAL DESIGN THEORY

An organization is a social entity separated into parts, both small and large, that divide work into manageable chunks. These parts typically exist to collectively achieve the goals of the organization. However, they require coordination to work cohesively. Built to be effective and efficient, an organization is purposefully constructed or designed (Burton & Obel, 2004). But, how do we go about designing an organization with high performance?

1. Information Processing View

Galbraith, in his seminal works, described an information processing model for analyzing the design of an organization. The information processing view revolves around uncertainty. Little to no uncertainty in the environment makes decision-making and coordination relatively simple. As the environment changes and becomes more uncertain, adjustments to the organization must occur, requiring coordination and information exchange among the various parts of the organization. Galbraith states "the greater the task uncertainty, the greater the amount of information that must be processed among decision makers during task execution in order to achieve a given level of performance" (1974, p. 28). Exchanging and processing information is vital to strong organizational performance. To effectively design an organization for peak performance, one must decide how to design an organization that balances the demand with the capacity to process information. As demand for information increases due to uncertainty, two primary methods allow an organization to influence their demand vs. capacity problem: 1) lower the requirement to process information, or 2) raise the ability to process information. To lower an organization's necessity to process information, it can increase its amount of slack resources. Slack resources are any resource excessive to requirements to complete a task.

Increasing slack resources, such as inventory-on-hand or extending delivery times, creates more options for exception handling (problem solving). Increasing slack resources results in fewer exceptions. Since exceptions inherently require more coordination to manage, increasing slack resources reduces the amount of coordination required in an organization. Another option is to create self-contained tasks requiring little coordination across the organization. Of course, both of these methods have drawbacks, usually resulting in loss of speed and loss of resource specialization, respectively (Galbraith, 1974). Because lowering the need to process information is likely impossible in military environments, I focus on the methods to increase the organization's ability to process information.

To increase the ability to process information an organization can either invest in vertical information systems or create various types of lateral relationships. Vertical information systems require a higher degree of formalization of language, leading to standardized and precise information allowing decision makers to speed up their decision-making process. Decision makers in vertical information systems often increase their capacity by using computer software and other technology solutions. Lateral relationships use decentralization to cut across normal authorization lines by employing a group level decision making process. Decentralization moves the level of decision making lower in the organization taking some burden off of decision makers in hierarchical decision-making structures. Examples of lateral relationships are direct contact coordination, liaisons, teams (planned or ad hoc), integrators, managerial links, or creation of matrix organizations (Galbraith, 1974).

2. The Star Model

To make decisions regarding organizational design, it is helpful to develop a framework. One of the most widely recognized frameworks in organizational design theory is the Star Model, promoted by Galbraith (2002). The model consists of design policies consisting of five categories: strategy, structure, processes, rewards, and people. The Star Model is depicted in Figure 1.

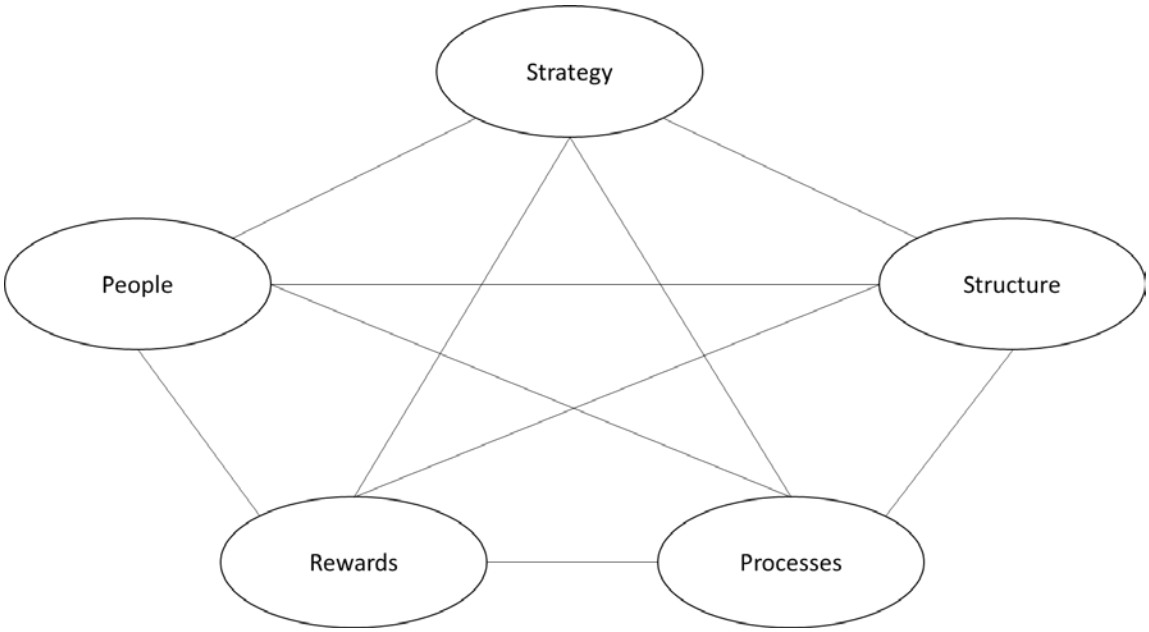

Figure 1. The Star Model. Source: Galbraith (2002, p. 10).

Strategy is what an organization needs to do to succeed. Strategy consists of goals, objectives, missions, values and all other aspects to ensure a competitive advantage. Conventionally, strategy is the first category addressed by an organization during design as it is the basis for choosing a structure (Galbraith, 2002).

In Galbraith's (2002) model, structure represents the power and authority to make decisions in an organization. Structure can be broken down further into four parts: specialization, shape, distribution of power, and departmentalization. Specialization consists of the various job specialties or functional areas in an organization that conduct the organization's work. Shape entails organizational size or the quantity of people in each department or functional area. Distribution of power deals vertically with the level of centralization in an organization and horizontally with the placement of power with the entity that is responsible for the matters significant to meeting the objectives of the organization. Departmentalization creates division into self-contained units. A department can be created for many reasons such as function, product, customer, or geography (Galbraith, 2002).

Processes are designed to tie the various pieces of the organization's structure together. Processes can be informational or decisional and can exist both horizontally (laterally) and vertically. Vertical processes are designed to allocate resources, while horizontal processes are designed to manage the work flow (Galbraith, 2002).

The rewards system in an organization is responsible for aligning the goals of the organization with those of the team or individual. Motivation and incentives are key drivers for the completion of tasks that lead toward mission accomplishment. Rewards can include salary, bonuses, awards, promotions, or other recognition mechanisms such as offering a future challenging assignment. It is important to ensure the rewards system is adequately aligned or woven into the structural and process design choices (Galbraith, 2002).

The people category in the Star Model directs human resource policies. Examples of human resource policies include retention, recruitment, rotation, training and education, and career alignment. These policies are designed to create and manage the talent needed in the organization that allows it to meet the chosen strategy. Human resource policies are intended to develop both the individual as well as the organization as a whole (Galbraith, 2002).

Galbraith emphasizes four implications of the Star Model. First, too much time and investment are usually spent on structure as a singular aspect due to its representation of status and power, often to the detriment of the organization. Second, different organizational design elements result from different strategies. This is important to understand because no one design ensures success for all organizations. This concept extends to the fact that as organizational priorities change, so should the other elements of the model. Third, all elements of the Star Model require alignment or harmony to achieve a successful organization. Lastly, the Star Model is designed around principles that a leader can control. Each principle has an effect on employee behavior. Intended or unintended changes to the model will cause behavioral and cultural changes in the organization (Galbraith, 2002). In Chapter VI, I use the Star Model to conduct an analysis of the MEF CE's organizational fit.

3. The Concept of Fit

The concept of fit is prominent in organizational design theory. An organization performs well when its structural factors match its strategic factors (Lawrence & Lorsch, 1967). When these factors do not match, the organization has a structural misfit, and will need to make adjustments to reach harmony and obtain peak performance. For instance, a company that exists in an unpredictable environment whose goal is to adapt quickly to market trends typically requires a certain level of decentralization in the decision-making process to produce compulsory speed. A hierarchical company with multiple vertical levels would have a difficult time producing the speed required. In this case, the structure of the company would not support the strategic goals of the company. To achieve peak performance, this misfit would need to be addressed by adjusting the goal, or more likely, adjusting the structure to fit the goal. This notion of fit is derived from contingency theory. Contingency theory teaches that there are multiple acceptable methods for a group to organize. Thus, organizations are contingent on many factors that require internal alignment in response to the circumstance of the external environment (Thompson, 1967; Galbraith, 1973; Mintzberg, 1981; Donaldson, 2001).

4. The Multi-contingency Diagnosis and Design Model

The literature regarding organizational design and contingency theory contains multiple useful models for testing configurations against numerous fit variables. In addition to Galbraith's Star Model (2002), there are several other models such as Mintzberg's structuring model (1981), and Miller's strategy and structure model (1987) that analyze certain aspects of fit. As a second framework, I have chosen to use the Multi-Contingency Diagnosis and Design Model produced by Burton and Obel because of its comprehensive approach. The purpose of the model is to use the diagnostic strategic factors associated with an organization (e.g., goals, strategy, size, technology, environment, etc.) and ensure they fit with the design recommendation possibilities such as structure and level of complexity or centralization (Burton & Obel, 2004). The model is summarized in Figure 2.

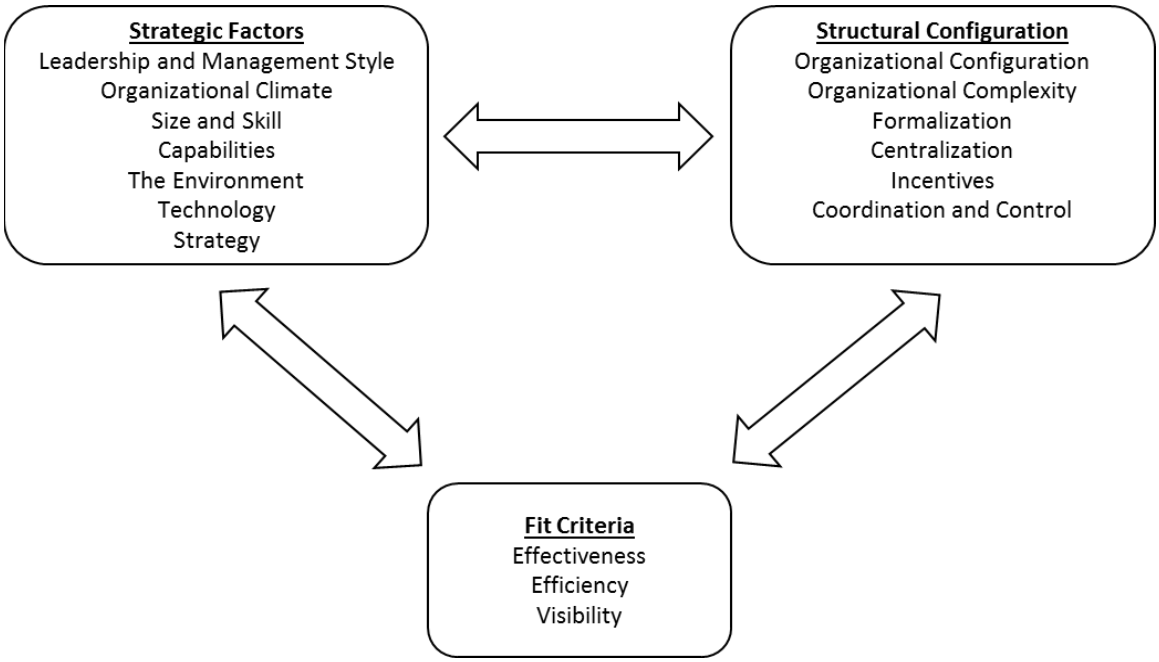

Figure 2. The Multi-contingency Diagnosis and Design Model. Source: Burton and Obel (2004, p. 17).

a. Strategic Factors and Fit

To obtain strategic fit, one must start with the goals of an organization. Burton and Obel state that organizational diagnosis and design "is a normative science that focuses on creating an organization to obtain given goals" (2004, p. 16). Since the focus of diagnosis and design depend upon the organization's goals, step one assesses the organization's goals to ensure they are clear and correct. Goals are divided into two categories: effectiveness and efficiency. Effectiveness focuses on outputs or outcomes (e.g., how well the mission was accomplished). On the other hand, efficiency focuses on inputs, resource use, and costs. These are competing concepts. All organizations value both of these goals and will work to achieve both, but one must govern due to their competing nature (Burton, DeSanctis, & Obel, 2006). Goals and mission form the foundation of the Multi-Contingency Diagnosis and Design Model. They affect the boundary of an organization relative to its environment and produce a profound impact on all of the strategic factors in the model (Burton & Obel, 2004). Their relationship is illustrated in Figure 3.

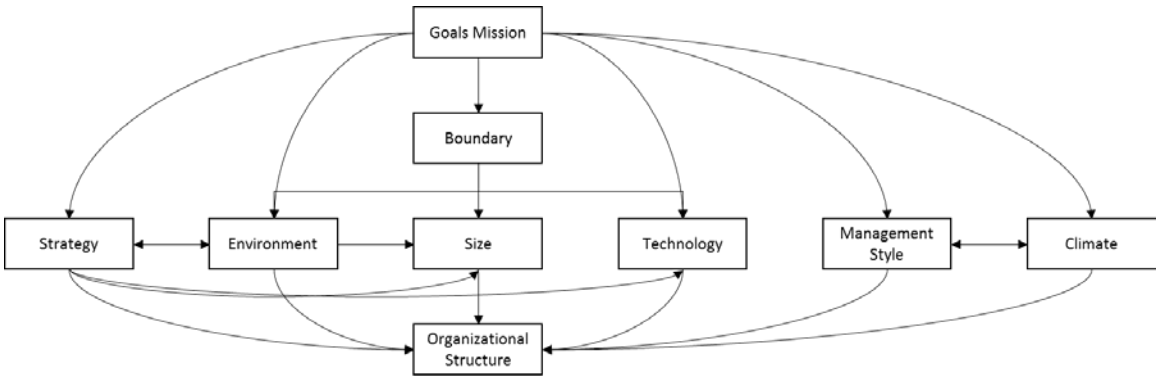

Figure 3. Organizational Context. Source: Burton and Obel (2004, p. 16).

Once goals are assessed, an organization analyzes its environment and develops a strategy. These two steps can be completed in any order. However, organizations must ensure that strategy fits with both its goals and the external environment. You cannot design a structure for an organization that provides for peak performance unless goals, strategy, and environment are a good fit. Size and workforce skill level, technology, management style, and climate have an impact on the structural design choices as well. All of these factors are deemed strategic factors in the Multi-Contingency Diagnosis and Design Model.

b. Contingency Fit

Once the strategic factors are diagnosed to contain a proper fit, an organization designs the proper structure, process, and control techniques by ensuring contingency fit between the strategic factors and the structural design factors. Each strategic factor suggests a proper design choice as they relate to each structural factor. This requires a step by step if-then approach developed by Burton and Obel from empirical studies of contingency theory. For example, consider the strategic factor organization size, and match it with the structural configuration design factor centralization. Contingency theory states that the larger the organization, the less centralized the organization should become. If these factors do not match, the organization has a misfit and needs to be redesigned (Burton & Obel, 2004).

c. Design Factors

An organization can assume four primary structures: simple, functional, divisional, or matrix (Burton et al., 2006). A simple structure is generally suited for a small start-up business where the workers report directly to the primary decision authority. The functional configuration divides the organization by work specialty. A military staff naturally divided by the administration, intelligence, operations, logistics, and communications functions makes a good example of the functional configuration. The divisional configuration creates self-contained units that do not require much coordination with the other divisions inside of the organization. For example, a Marine Division contains interchangeable infantry regiments. Each regiment incorporates all the functional capability to operate as a self-contained unit and requires very little coordination with the other regiments in the division. The matrix configuration is a dual hierarchy configuration combining aspects of the divisional and functional structures. Consulting companies are typically a good example of a matrix organization. They are generally organized into divisions by geography, with a functional structure inside of that geography consisting of multiple disciplines. However, they are further organized into customer focused teams encapsulating slices of each specialty into their team. There are now several reporting structures in this example: one to the functional leader in each division, and one to the customer team lead. In a matrix organization, these two reporting chains must coexist. The matrix configuration is often used due to an extremely uncertain and volatile environment (Burton & Obel, 2004).

While structural configuration is often the most analyzed aspect of organizational fit, the other design factors are just as important (Galbraith, 2002). The other design factors include centralization, formalization, complexity, incentives, and coordination and control. While structural configuration specifies the foundation for the separation of work activities, complexity refers to range and distribution of the basic structural formations. "Organizational complexity is the degree of horizontal, vertical, and spatial differentiation" (Burton & Obel, 2004, p. 73) resident in an organization. Horizontal differentiation is the measure of specialization and various advanced educations or training specialties contained in an organization. The more fields of specialization contained in an organization, the more horizontal differentiation. Vertical differentiation measures the number of tiers that are

present in an organization. Spatial differentiation measures the physical separation or distance between elements of an organization. Formalization measures the level of standardization present in an organization. For instance, organizations with a large number of prescriptive rules and standing operating procedures (SOPs) possess a high level of formalization. Burton and Obel (2004) also state that centralization denotes where decisions are made in an organization. If the primary decision authority makes most of the decisions, the level of centralization is high. If subordinate groups share in decision-making responsibilities and don't require the primary decision authority to make most of the decisions, the level of centralization drops to some level of decentralization. Incentives are the manner in which individuals in an organization are evaluated and are then compensated for their work performance (Burton & Obel, 2004).

Lawrence and Lorsch (1967) analyzed the relationship between differentiation and integration. The more differentiation needed in an organization, the more integration will be required as well. Burton and Obel teach us that work is broken into parts according to many factors such as specialty or manageability. The organization must coordinate each element to reach the organization's collective goals. The coordination and control design factors encompass differentiation and integration specifically. Managing the levels of complexity, differentiation, formalization, and incentives are a means to obtain coordination and control. Other methods include direct supervision, liaisons, meetings, and information technology sharing systems such as email, chat, common operating pictures (COPs) or share drives (Burton & Obel, 2004).

d. Design and Total Fit

The design factors should be designed to fit the strategic factors. If they are not, a misfit has occurred demanding organizational redesign to obtain proper fit. If the design factors match the strategic factors, an organization achieves contingency fit. But, there is still one more factor required to achieve total fit. Multiple design factors such as formalization and complexity may be recommended based upon contingency fit. While they may be contingent upon the strategic factors and thus initially chosen, they may not make sense when their application is examined together. For instance, multiple

contingencies may dictate both low centralization and low formalization, but the two in combination could cause problems. This is known as poor design fit and requires redesign. Proper balance of design factors leads to design fit. If the organization achieves proper strategic, contingent, and design fit the organization is designed to perform its goals well and can achieve peak performance (Burton & Obel, 2004). Figure 4 illustrates this concept.

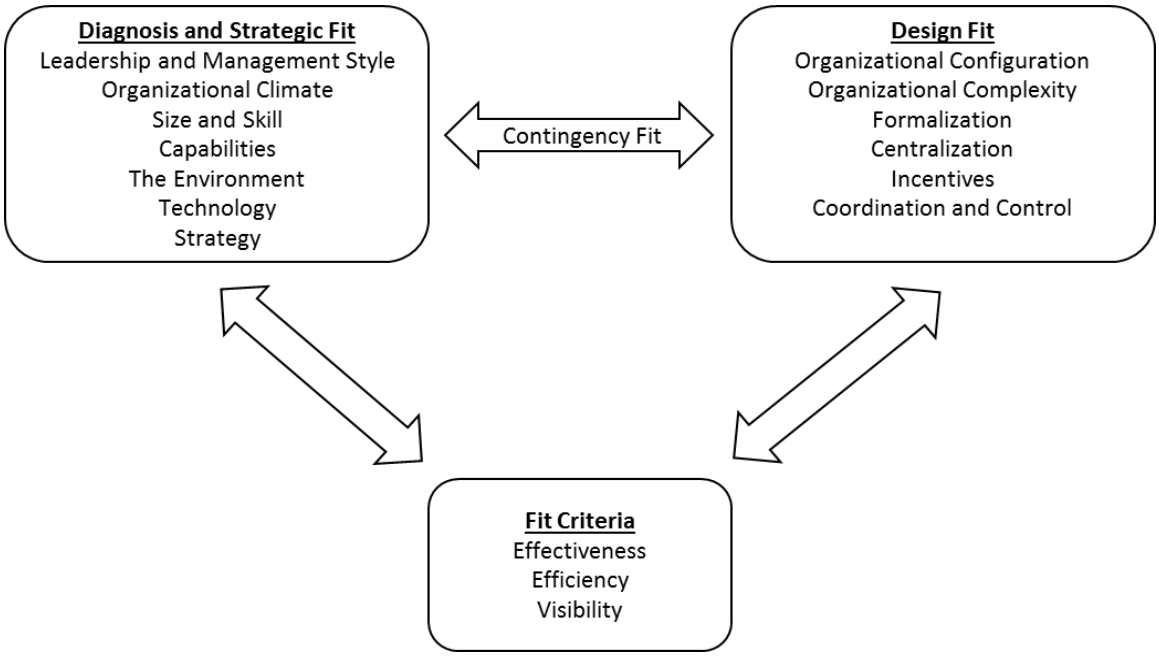

Figure 4. Strategic Organizational Diagnosis and Design Factors. Source: Burton and Obel (2004, p. 20).

The Organizational Diagnosis and Design Model, as described in this section, is the second model I use to analyze the fit of the MEF CE organization to perform well in the future operational environment.

5. ORGCON Expert System

ORGCON, an expert system developed by Burton and Obel, is designed to measure the level of fitness in an organization. This thesis uses ORGCON to analyze the MEF CE. The design of ORGCON is reflective of the previously explained Multi-Contingency Diagnosis and Design Model that allows for multiple strategic and design factors and

provides an analysis of their interaction. ORGCON takes a macro-level view utilizing multiple-contingency theory that leads to qualitative "suggestions for improving structural and contextual fit" (Levitt, 2012, p. 62). It has undergone extensive testing and validation over several decades and is further validated through experimentation and consultation with hundreds of companies (Nissen & Buettner, 2004; Levitt, 2012) making it powerful and relevant for predicting organizational fit. In Chapter V, I use ORGCON to conduct an analysis of the MEF CE's organizational fit.

B. ORGANIZATIONAL DESIGN THEORY CONCLUSION

Chapter III introduces the information processing view, Galbraith's Sar Model, the concept of fit, the Multi-Contingency Diagnosis and Design Model, and ORGCON developed by Burton and Obel. While the two models introduced in this chapter are individually powerful, I have chosen to use both models as methods of analysis because they take different approaches to analyzing the issue of organizational fit, allowing for multiple conclusions to produce more comprehensive results. Chapter IV explains how both of these models are used in this research after presenting an overview of Marine Corps doctrine and structure in Chapter III.

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III. MARINE CORPS DOCTRINE AND STRUCTURE OVERVIEW

A. DOCTRINE

I analyze Marine Corps doctrine and structure to provide the reader with an understanding of the goals and objectives of the Marine Corps as they pertain to warfighting, combined arms, organization of the Marine Air-Ground Task Force (MAGTF), command and control, and the fires and targeting process. Understanding of these elements serve to provide a conceptual framework for how the Marine Corps operates and how they currently organize to conduct operations in the information environment (OIE).

1. Warfighting

A series of nine doctrinal publications comprise the basis for how the Marine Corps fights. *Marine Corps Doctrinal Publication 1-0 (MCDP 1-0*) describes the Marine Corps' nature and theory of warfare as "a violent clash of human wills with an enduring nature characterized by friction, uncertainty, disorder, and complexity" (2017d, p. 1-3). The publication also details how the organization will prepare for and conduct war given these characteristics.

a. Maneuver Warfare and Combined Arms

The Marine Corps' conduct of warfare builds upon a doctrine known as maneuver warfare, which means "taking action to generate and exploit some kind of advantage over the enemy as a means of accomplishing our objectives as effectively as possible. That advantage may be psychological, technological, or temporal as well as spatial" (USMC, 1997, p. 72). Key to maneuver warfare is the idea of shattering an enemy's will to fight by maneuvering in all domains simultaneously. Maneuver warfare aims to destroy the enemy system through its critical vulnerabilities by utilizing speed, tempo, surprise, and focus. Central to the idea of maneuver warfare is the concept of combined arms action, which is "the full integration of arms in such a way that to counteract one, the enemy must become more vulnerable to another" (USMC, 1997, p. 93).

b. Planning Tenets

The Marine Corps has three planning tenets: 1) top-down planning, 2) single battle concept, and 3) integrated planning.

> Top-down planning. Top-down planning is the active participation of commanders that drives the process at their respective levels to gain knowledge and promote understanding as a basis for decision-making.
>
> Single-battle concept. Single-battle is a unifying perspective of operations, which holds that actions anywhere in the operational environment can affect actions elsewhere. For example, early fires success in the deep fight facilitates rapid maneuver in the close battle, which exacerbates combat service support push over limited lines of communications.
>
> Integrated planning. Integrated planning is the application of a systemic and systematic approach to planning through the employment of a planning team that is composed of subject matter experts in appropriate disciplines to consider all relevant factors, reduce omissions, and share information. (USMC, 2017d, p. 3-2)

The planning tenets are developed from maneuver warfare doctrine and guide a Commander Officer's use of his or her staff during the planning and execution of military operations.

2. Organization

a. Organization of the MAGTF

In accordance with the combined arms concept, the Marine Corps organizes to fight in a MAGTF. The MAGTF consists of four elements: a command element (CE), a ground combat element (GCE), an aviation combat element (ACE), and a logistics combat element (LCE). This structure allows for unity of command, which provides flexibility and operational tempo in a combat environment. Figure 5 displays the organization of the MAGTF.

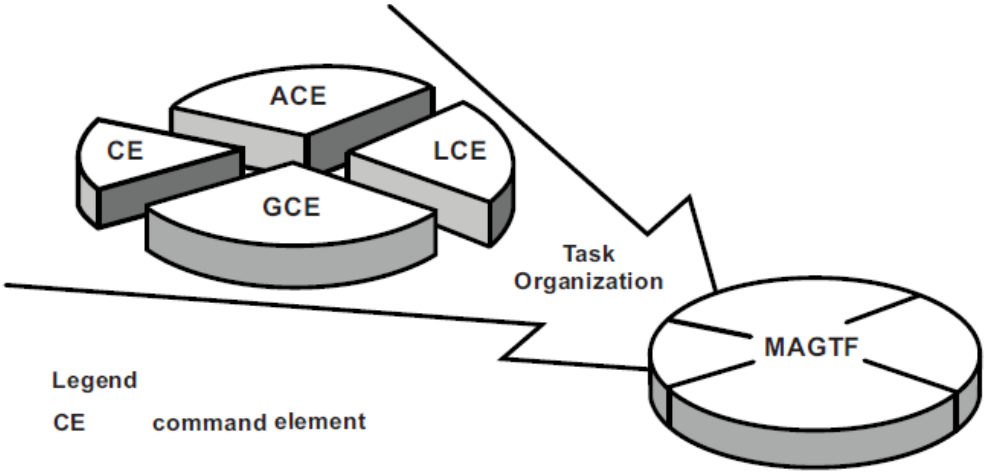

Figure 5. Organization of the MAGTF. Source: USMC (2017d, p. 2-7).

b. MEF Organization

The MAGTF can be scaled depending upon the complexity and size of the mission. There are five different sized MAGTFs in the Marine Corps, but this thesis focuses on the MEF because it is the "principle warfighting organization" (USMC, 2017d, p. 2-9) in the Marine Corps. Figure 6 details the organization of the MEF.

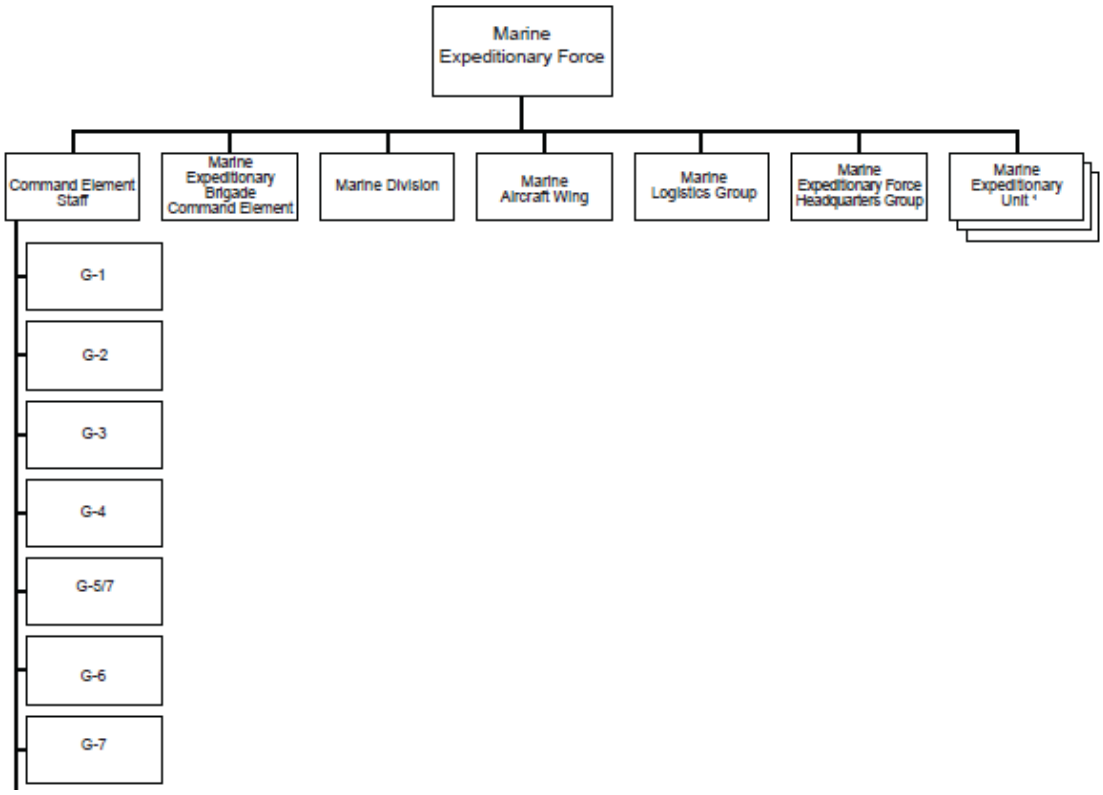

Figure 6. Organization of the MEF. Source: USMC (2015, p. 1-5).

c. MEF CE Organization

The elements of command and control needed to plan and execute MEF operations are provided by the MEF CE. This thesis primarily focuses on the CE. The MEF CE consists of the Commanding General, the primary and special staff, and prior to July 2017, the MEF Headquarters Group (MHG). Figure 7 details the former organizational hierarchy of the MHG.

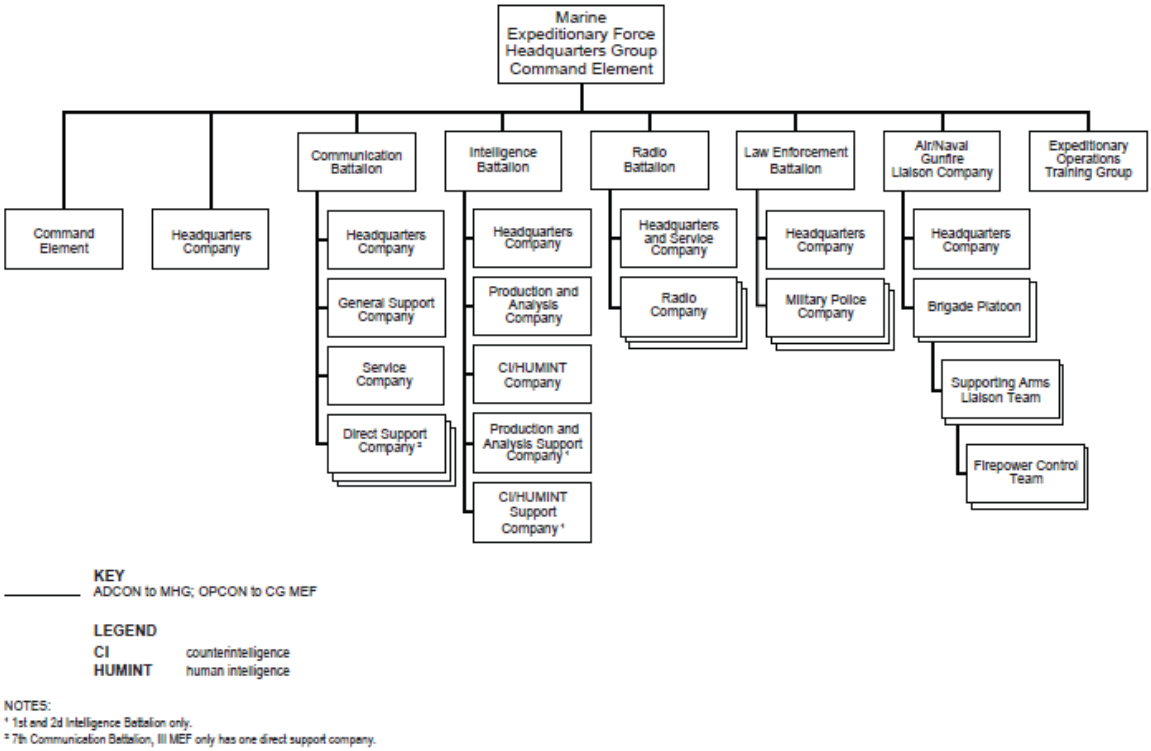

Figure 7. MHG Structure prior to 2017 Reorganization. Source: USMC (2015, p. 4-2).

The MEF CE owns the predominance of the information warfare capability in the Marine Corps. I argue that capability is spread into many different areas inside of the MEF CE, some in the MHG, and some in the MEF primary and special staff sections. This stove piping prevents coherent coordination over all of the units involved. This assertion is supported by the Marine Corps' new restructure of the MEF CE to cope with a changing information environment (IE) (USMC, 2017c). More on this will be covered in Chapter III, Section E, Marine Corps Evolution in the Information Environment.

3. Command and Control

To gain a better appreciation for the design of the MEF CE, it is helpful for the reader to have an understanding of the command and control doctrine that the Marine Corps practices. "No single activity in war is more important than command and control" (USMC, 1996, p. 35). There is no single definition for command and control in Marine Corps

doctrine. Instead, there are several pages of description and I attempt to highlight the most important of those.

> Command and control encompasses all military functions and operations, giving them meaning and harmonizing them into a meaningful whole…and is fundamentally the business of the commander. Command and control is the means by which a commander recognizes what needs to be done and sees to it that appropriate actions are taken…and effective command and control involves protecting our own command and control activities against enemy interference and actively monitoring, manipulating, and disrupting the enemy's command and control activities. (USMC, 1996, pp. 36–38)

The main purpose of command and control is to provide the commanding officer a method to develop situational awareness, which is the basis for making decisions in combat.

Command and control are related to one another in several ways. Traditional viewpoints hold that both command and control mechanisms travel from higher to lower levels echelons. However, the Marine Corps also believes that these mechanisms operate in a reciprocal manner as well. The commander exercises command over subordinate elements, and they provide feedback, which allows a commander to adapt, thus exercising control (USMC, 1996). Figure 8 details these relationships.

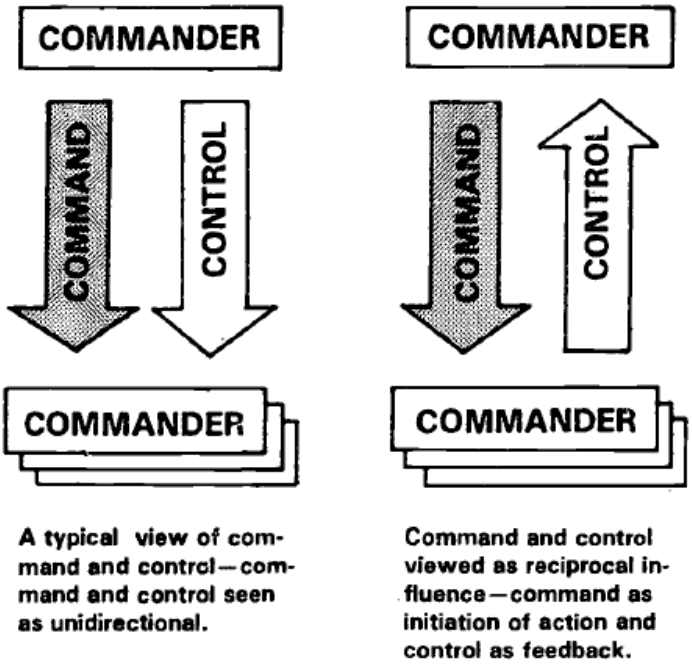

Figure 8. Relationships between Command and Control. Source: USMC (1996, p. 41).

The Marine Corps subscribes to two fundamental attributes of war when describing the importance of command and control: uncertainty and time. Uncertainty is a natural phenomenon of warfare. Command and control are executed to decrease the level of uncertainty until it reaches a manageable level so that the commander can make an informed decision. The more uncertain a situation is, the more time it takes to gain understanding. "The resulting tension between coping with uncertainty and racing against time presents the fundamental challenge of command and control" (USMC, 1996, p. 57).

Command and control is about generating tempo. The faster the Marine Corps is able to conduct command and control of its forces, the more tempo that is generated relative to the enemy. Command and control is a constantly looping process. The Marine Corps uses John Boyd's model of command and control. John Boyd coined this process the OODA Loop: observe, orient, decide, act. (USMC, 1996). Figure 9 details the OODA Loop.

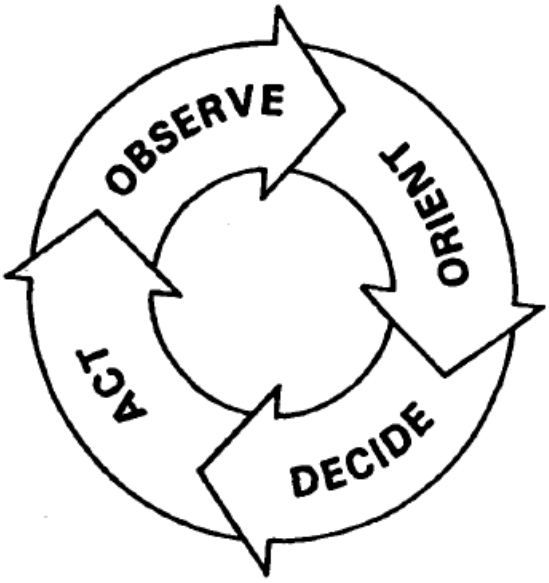

Figure 9. OODA Loop. Source: USMC (1996, p. 64).

In the observe phase, a commander utilizes his or her sensors to observe the enemy and the environment. The Commander then orients his or her staff and subordinates by making estimations, assumptions, and conducting an analysis of the problem. The commander then makes a decision and commences with an action that implements the decision. This action will have an effect on the battlefield, which requires observation, and thus the cycle starts over and over again. The faster that the Marine Corps can execute the OODA loop relative to the enemy generates the tempo required to fight and win (USMC, 1996).

4. MEF Fires and Targeting

An understanding of MEF-level fires and the targeting process is essential to understanding how OIE is managed at the MEF. This section describes planning fires, fires coordination centers and cells, the targeting process, and the targeting board.

a. Fires Planning at the MEF-Level

Fires planning at the MEF occurs in three stages: conceptual, functional, and detailed. Conceptual planning involves broad concepts that establish goals and objectives for the fires process as it relates to the overall plan. Next, functional planning occurs where planners incorporate into functional support plans for the various fire support assets

available such as artillery, aviation assets, and any non-lethal activities that fall under the purview of the commander. Detailed planning dictates the action or tasks that are required to accomplish the fires objectives (USMC, 2016a).

b. MEF Fires Agencies

There are two doctrinal fires agencies that coordinate fires within the MEF: the Force Fires Coordination Center (FFCC) and the Information Operations Center. The FFCC, under the cognizance of the G-3, is the primary entity responsible for planning, coordinating, and monitoring the execution of MEF-level fires. The Information Operations Center coordinates both lethal and non-lethal fires as they relate to information operations such as deception, operations security, electronic warfare, or cyberspace warfare. However, these two cells, in certain cases, have been combined with the MEF Air Center to form the Fires and Effects Coordination Cell (FECC). In the case of the FECC, the organization is responsible for the coordination of all lethal and non-lethal fires (USMC, 2016a).

c. MEF Targeting Process

The targeting process details how fires are planned and executed at the MEF. "Targeting is the process of selecting and prioritizing targets and matching the appropriate response to them" (USMC, 2016a, p. 3-10). The Marine Corps targeting process consists of four steps: decide, detect, deliver, and assess. The decide step is where planners make a decision regarding which targets to attack. This process consists of deciding how, where, and what effect is desired. It also includes what asset is required and how the assessment will be incorporated once the fire is executed. The Detect step entails the location of the target with that information passed to the appropriate agency that can authorize the execution of the fire. Deliver is the execution step where fires entities execute their assigned fires. This step can result from a planned target or a dynamic target. Assess is the step that compares the intended fires effect with the actual effect produced on the target. To aid this effort, targets are typically assigned measures of effectiveness (MOE) and measures of performance (MOP). Failure to reach a MOE or MOP can lead to a reallocation

of fires assets to reengage a target should the commander desire (USMC, 2016a). The targeting cycle is illustrated in Figure 10.

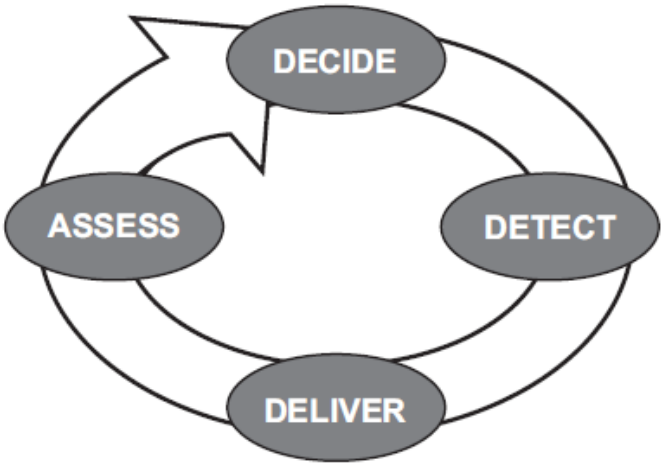

Figure 10. The MEF Targeting Cycle. Source: USMC (2016a, p. 3-11).

d. MEF Targeting Board

The targeting board, an extension of the planning effort, transforms broad planning efforts into detailed planning required for execution. Executed daily in combat, the targeting board serves as a decision brief for the Commanding General to authorize target nominations and methods for execution. The board also serves as a means for the Commanding General to provide fires guidance for subsequent day planning. The targeting board is fed by the targeting working group where all fires are carefully analyzed and nominated for execution by a representative compilation of the staff. This effort is currently led by the FECC. The targeting board and working group are typically dependent upon the Air Tasking Order (ATO) due to the heavy use of Marine Corps aviation in the fires process as well as the rigorous structure required to synchronize aviation fires assets.

B. INFORMATION WARFARE

Information Warfare is not currently defined in Marine Corps doctrine, although I argue that it should be. However, RAND Corporation developed a definition while examining the subject for the United States Army: "Information warfare is conflict or struggle between two or more groups in the information environment" (Porche et al., 2013, p. XV). Recognizing information is contested is a key principal. Understanding the environment where information is contested is the next logical step. Joint Pub 3-13 defines the IE as "the aggregate of individuals, organizations, and systems that collect, process, disseminate, or act on information. This environment consists of three interrelated dimensions which continuously interact with individuals, organizations, and systems. These dimensions are the physical, informational, and cognitive" (Joint Chiefs of Staff [JCS], 2014, p. I-2). Simply put, the IE exists everywhere, in all dimensions, and across all domains. The Marine Corps concurs with this definition (USMC, 2016b). OIE are termed IE operations defined by the Marine Corps as "the integrated planning and employment of MAGTF, Naval, Joint, and Interagency information capabilities, resources, and activities that enhance the Marine Corps single-battle concept and provide defensive, offensive, exploitative effects and support in order to operate, fight, and win in and through a contested information environment" (USMC, 2017c, p. 1). OIE take place at all levels and in all domains during both war and peacetime. To visualize where the IE exists and where OIE fit through the framework of strategic, operational, and tactical lenses, see Figure 11.

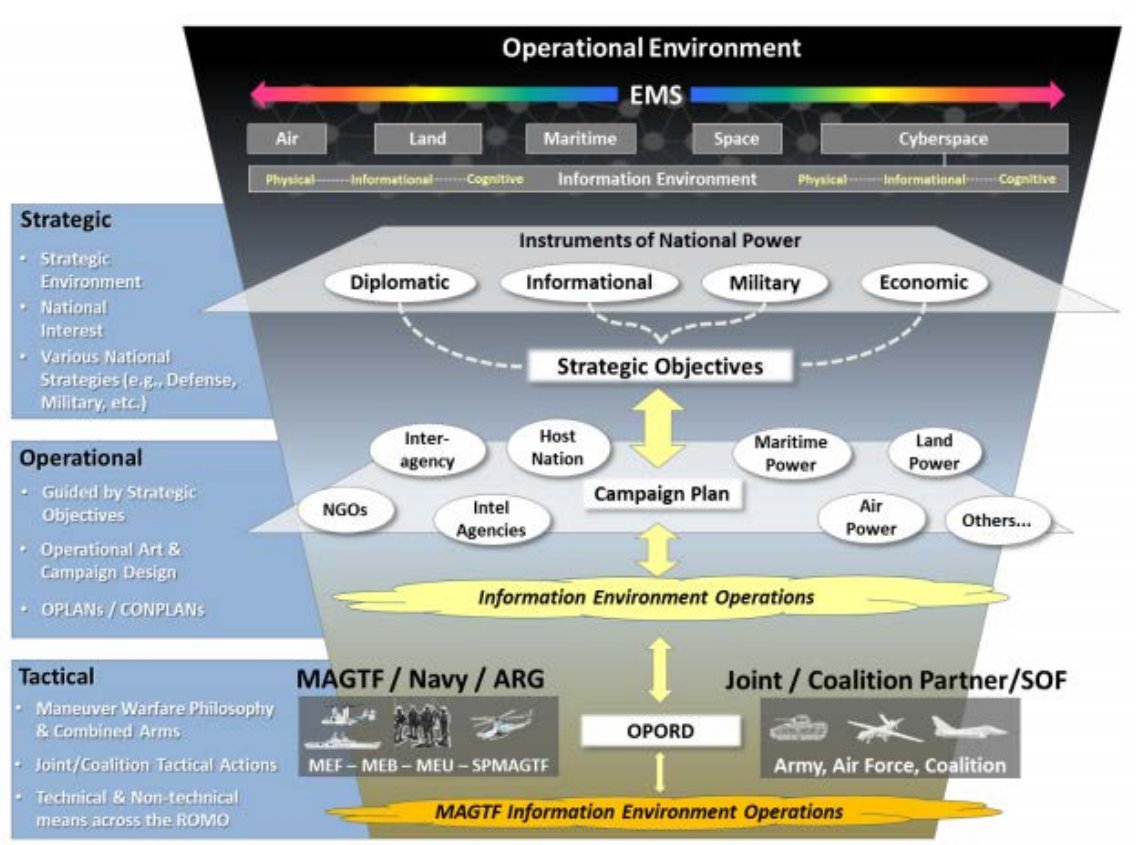

Figure 11. Information Environment Operations. Source: USMC (2017c, p. 21).

The Marine Corps recognizes seven distinct functions of OIE: 1) “assure enterprise command and control and critical systems,” 2) “provide battlespace awareness,” 3) “attack and exploit networks, systems, and information,” 4) “inform domestic and international audiences,” 5) “influence foreign target audiences,” 6) “deceive foreign target audiences,” and 7) “control information warfare capabilities, resources, and activities” (USMC, 2017c, p. 2). These functions and their definitions are summarized in Figure 12.

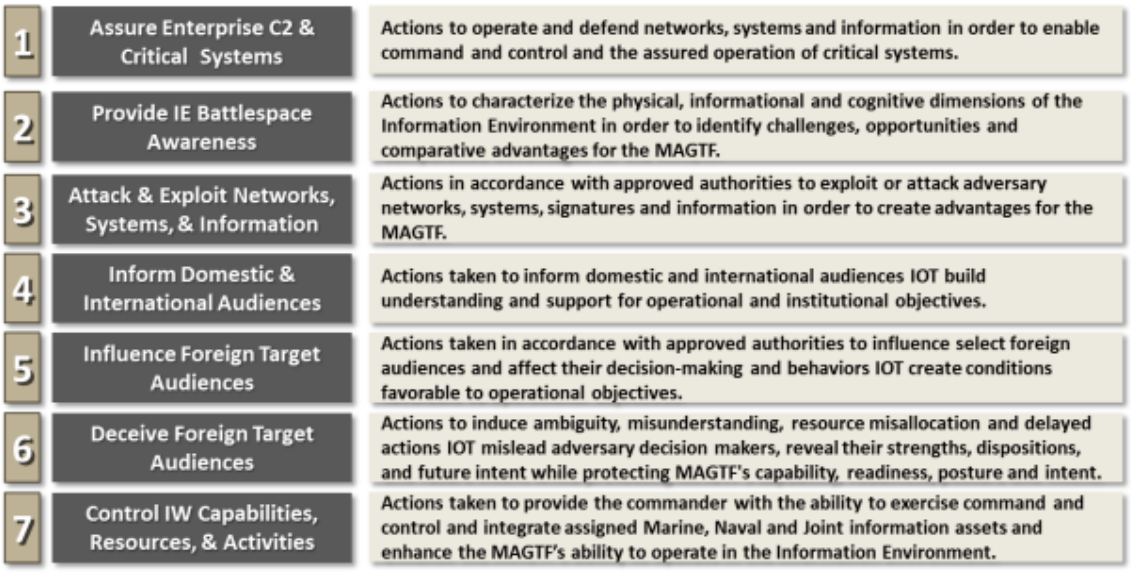

Figure 12. 7 Functions of Operations in the Information Environment. Source: USMC (2017c, p. 2).

Marine Corps OIE are grouped functionally by the following six operational capability areas: "electromagnetic spectrum (EMS) operations, cyberspace operations, space operations, influence operations, deception operations, and inform operations" (USMC, 2017c, p. 22). These six operational capability areas are shown in Figure 13 and must be properly aligned to the seven functions of OIE listed in Figure 12.

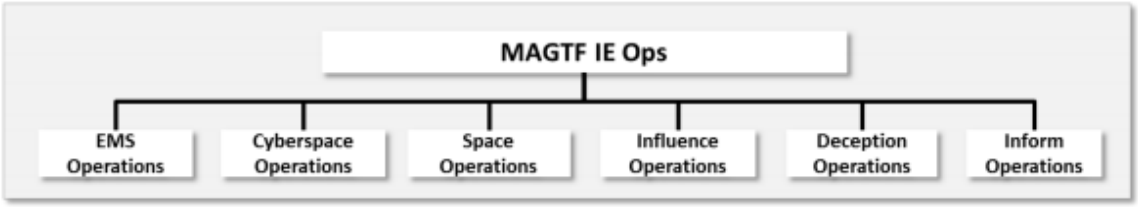

Figure 13. The Six Information Environment Operational Capability Areas. Source: USMC (2017c, p. 23).

These capability areas are a departure from standing Joint (JCS, 2014) and Marine Corps (USMC, 2016b) doctrine, which instead focus on information-related capabilities (IRCs). This conflict demonstrates how quickly information warfare is evolving.

C. MARINE CORPS EVOLUTION IN THE INFORMATION ENVIRONMENT

To further understand information warfare in the context of the Marine Corps, it is useful to examine recent history. Some argue that the Marine Corps' consistent involvement in two land wars in Afghanistan and Iraq, spanning more than thirteen years, have kept it from proper future planning. This may be the case, but I argue that problem was addressed in 2014 with the release of *Expeditionary Force 21 (EF 21)* under the guidance of Commandant Amos. The planning document defined a future operational environment "characterized by volatility, instability, and complexity" (USMC, 2014a, p. 21) that includes "the proliferation of modern conventional and cyberspace weapons to a broader range of state and non-state entities, along with the erosion of U.S. technological advantages in areas where we have long enjoyed relative superiority" (USMC, 2014a, p. 8). *EF 21* identified future areas of change in organization, posture, training, and thinking to adapt to that future operating environment. Among other areas, the document identified force needs and subsequent changes in the areas of intelligence, communications, information operations (IO), cyberspace operations, and electromagnetic spectrum operations. The document also ordered the formation of the MAGTF Cyberspace and Electromagnetic Warfare and Coordination Cell at the MEF CE. I argue that while this approach lacked the structure and process change required to holistically coordinate all aspects of the IE, the formation of that coordination cell in 2014 represents the first meaningful step toward the Marine Corps coordinating across multiple functions in the IE.

The ideas of future planning, experimentation, and change continued with the release of General Dunford's planning guidance to the Marine Corps in 2015 "concentrated on developing and fielding highly advanced, indirect, or disruptive concepts and capabilities" (Dunford, 2015, p. 10). However, this concept stalled with General Dunford's subsequent assignment as the Chairman of the Joint Chiefs of Staff. The release of *FRAGO #1* by General Neller demonstrated renewed traction of the need for adaptation and experimentation in the Marine Corps. His order directed the Marine Corps to "grow Information Operations (IO), Cyber, and Electronic Warfare (EW) capability at Marine Forces (MARFOR) and Marine Expeditionary Force (MEF) levels to enhance the

capabilities of forward deployed forces no later than the end of FY17" (Neller, 2016, p. 4-5). These capabilities recognized a need, but like *EF 21* and the former Commandant's planning guidance, it still lacked wholistic functional integration or instructions for implementation in the force.

The *Marine Corps Operating Concept (MOC)* was published in September 2016 by General Neller as the most comprehensive document outlining the need for change in the Marine Corps to date. The concept describes a similar operating environment as outlined in *EF 21* and describes the problem that the force currently faces: "The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures, and an increasingly non-permissive maritime domain" (p. 8). The response to this problem outlined by the operating concept is to conduct "maneuver warfare in every dimension; combined arms in all domains" and is more fully stated as:

> The 21st century MAGTF conducts maneuver warfare in the physical and cognitive dimensions of conflict to generate and exploit psychological, technological, temporal, and spatial advantages over the adversary. The 21st century MAGTF executes maneuver warfare through a combined arms approach that embraces *information warfare as indispensable* for achieving complementary effects across five domains—air, land, sea, space, and cyberspace. The 21st century MAGTF avoids linear, sequential, and phased approaches to operations and blends maneuver warfare and combined arms to generate the combat power needed for simultaneity of action in its full range of missions. (USMC, 2016c, p. 8)

The goal is to reorganize the force for combat by 2025. As it applies to information warfare specifically, the *MOC* outlined the following functional tasks to accomplish: 1) "evolve the MAGTF to include integrating command, control, and informational tools," 2) "operate with resilience in a contested network environment to include examining the role of signature in the offense and defense," 3) increase "networking for rapid/precision fires," 4) develop methods to "[push] processing power to the tactical edge," 5) develop "an enhanced concept of intelligence," and 6) develop "a broader concept of combined arms/information warfare" (USMC, 2016c, pp. 13–21).

General Neller furthered his commitment to change in 2017 by publishing two more documents: *Seize the Force* and the *2017 CMC Institutional-Level Task List for Deputy Commandants (DCs) and Commanders*. In *Seize the Force* he writes: “From now on, we will have to fight not only in the domains of land, sea, and air, but also in space and cyberspace. We will have to fight for and with information on the battleground of perceptions and ideas. And we will have to win the battle of electromagnetic signatures in which to be detected is to be killed” (USMC, 2017b, p. 2). The 2017 task list proved General Neller’s commitment to those words by designating a new three-star Deputy Commandant position responsible for all aspects of OIE. It tasked HQMC to “develop and execute a transition plan to align [the] HQMC and service organizations to include C4 Department, Intelligence Department, and portions of Marine Corps Information Operations Command (MCIOC), PP&O, and CD&I under a unified [OIE] construct” (Neller, 2017a, p. 4). Also contained in the document was a task to all Deputy Commandants and all Marine Forces Commanders to develop a plan to implement the *MOC* no later than 30 June 2017 (Neller, 2017a).

General Neller directed the formation of multiple working groups from 2015 to present to develop the *MOC* stated problem and take action to develop the future force. The Marine Corps Information Warfare Task Force was created specifically to “develop a conceptual and organizational construct for operating forces and supporting establishment to enable integration of [information warfare] capabilities supporting fusion of effects for the MAGTF and [information warfare] organizational options and potential courses of action” (USMC, 2014a, paras 1–3). The task force’s efforts culminated in the creation of the *Marine Air Ground Task Force Information Environment Operations Concept of Employment (MAGTF IEO COE)* published in July 2017. The concept outlines the Marine Corps’ understanding of the IE including its current organizational shortcomings to operate in that environment. It outlines how the Marine Corps will change by 2025 to meet those challenges by integrating four central ideas: 1) planning and executing IE operations along functional lines of effort, 2) establishing a dedicated OIE organization, the MEF Information Group (MIG), charged with integrating OIE along functional lines of effort, 3) building agile and distributed command and control capabilities, and 4.) developing a

near-real time running estimate to feed the common operational picture (USMC, 2017c). Figure 14 details the new MIG organization.

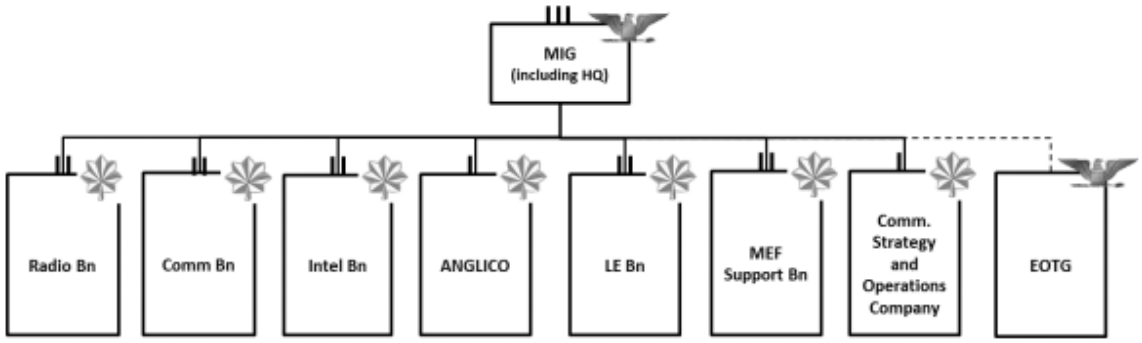

Figure 14. MIG Structure. Source: USMC (2017c, p. 4).

The differences in this structure stem from the reporting relations between the MIG CO and its subordinate units. Before the MIG was formed, its predecessor was the MEF Headquarters Group (MHG). The MHG provided mainly administrative and logistics support to the Battalions and CE staff sections as annotated in Figure 7. Now, the subordinate units report directly to the MIG, and the MIG CO reports directly to the MEF Commanding General (CG). I argue there now exists strong potential for conflict caused by this relationship. For example, the Communications Battalion CO reports directly to the MIG CO, but also has responsibilities to the MEF G-6 under communications control (COMCON) authority delegated to the MEF G-6 by the MEF Commanding General. This reorganization raises many questions. Is this the best structure for the MEF CE to perform in the IE? Are the processes currently in place a good organizational fit? Further focused experimentation is warranted to determine the answers to these questions.

D. CONCLUSION AND SCOPE FOR THIS THESIS

Chapter III illustrates that the future operating environment will be characterized by friction, uncertainty, and information warfare at all levels. The Marine Corps has framed this problem, has relatively quickly developed a plan to address the problem, and in some cases, is already executing this plan. For instance, the MEF Headquarters Groups were

redesignated as MEF Information Groups and declared initial operations capable (IOC) as of July 2017. However, anytime an organization experiences change, particularly of this speed and magnitude, it will experience bumps in the road. The Marine Corps admits as much in the *MAGTF IEO COE* when it states: "this document is not prescriptive and is meant to provide a starting point for experimentation, wargaming, and training exercises to discover and refine this capability in the coming years" (2017c, p. 3). This chapter builds upon the required topics that detail a framework for organizational design by introducing Marine Corps doctrine, information warfare considerations, and the evolution of the Marine Corps in the IE. These topics will prove essential to characterizing the current MEF CE organization, examining its level of organizational fit, and examining a way forward for the MEF CE to positively perform when conducting operations in the future operating environment. Chapter IV details what methods are used to accomplish this goal.

IV. METHOD

This chapter outlines the methods used for this research. The research includes five mutually supporting efforts: a review of Marine Corps and MEF doctrine and policy, use of the ORGCON expert system, a survey of USMC personnel, semi-structured interviews of Marine Corps personnel, a Star Model analysis. Chapter IV details my reasoning for each of the five efforts.

A. MARINE CORPS AND MEF DOCTRINE AND POLICY

I first reviewed all relevant USMC and MEF doctrine and policy regarding the expected future operating environment and how the Marine Corps would doctrinally cope to compete in the future operating environment. The major topics analyzed are listed below. For a full list of the publications reviewed, see Appendix B.

- Marine Corps organization
- Marine Corps doctrinal publications
- Marine Corps planning guidance and publications
- Marine Corps fires and targeting, communications, and intelligence publications
- Information operations publications (both USMC and Joint)
- The concepts on MAGTF Operations in the Information Environment (OIE) and its subordinate concepts
- MEF staff regulations and tactical standard operation procedures (TACSOP)

I reviewed these documents to scope my understanding of the IE and the manner in which the Marine Corps fights. The review served to provide an organizational lens to frame the problem further. The output of the review led to the selection of the MEF Command

Element (CE) as the unit of focus. Furthermore, the MEF CE will only receive consideration in the following state and environment: combat operations against a peer competitor. This is important to note because military organizations, particularly the Marine Corps, have a different focus and organization in garrison as opposed to in combat (USMC, 2017d). I chose combat operations because the environment is more uncertain, which leads to a more difficult problem to solve. I chose a peer competitor because the information environment will be more complex, which is also a more difficult problem to solve. Chapter III provides more detail on this subject.

B. ORGANIZATIONAL CONSULTANT

This thesis uses Organizational Consultant (ORGCON) as a qualitative expert system to analyze the organizational fitness of the MEF CE. ORGCON follows the Multi-Contingency Diagnosis and Design model (presented in Chapter II) developed by Burton and Obel.

> Burton and Obel's (2004) Organizational Consultant® uses sets of rules based on meticulously integrated findings from decades of empirical organizational research to analyze the degree of fit among an organization's environment, technology, management style, and multiple dimensions of its structural configuration. Organizational Consultant has been validated against more than one hundred enterprises in multiple countries and can thus be used confidently at the level of a business unit or an enterprise to diagnose structural misfits as well as to explore the fit of alternative organizational configurations and to make predictions about the fitness of innovative organizational designs proposed to address hypothetical future technological, environmental, and managerial contexts. (Levitt, 2012, pp. 59–60)

ORGCON has proven useful as an expert system capable of successfully modeling military organizations (Acquaro, 2007; Borchert, 1998; Flood, Marm, & Young, 2010; Lowe, 2004). I used ORGCON version 9.1 in this study to model the MEF CE. ORGCON poses 77 questions to the user regarding the MEF CE's goals, environment and structure, process and people, size and age, and coordination and control. These questions are presented in Appendix C. The answers to those questions are the inputs to the program that provide the basis to model the MEF CE. Based on these inputs, ORGCON provides the following outputs: strategic misfits, contingency misfits, an analysis of the MEF CE's current

strategic and design factors, recommendations regarding change to strategic and design characteristics, overall organizational misfits, and recommendations on how to remove overall organizational misfits (EcoMerc, 2015).

To better understand the software, I first attempted to answer all of the questions based upon my twelve years of experience as a Marine Corps Officer. During my first attempt, I quickly realized that I needed a more in-depth understanding of the MEF CE to produce accuracy. This led to a larger selection of reading materials and to the realization that I required input from the operating forces, particularly from those with MEF CE experience.

With a broader array of research materials, to include a review of the MCDP series and the I and II MEF TACSOPs, I judged, with very high confidence, the majority of my answers to accurately represent the characteristics of a MEF CE with the exception of twelve questions. Before obtaining input from the operating forces and in a concerted effort to keep future external questions to a minimum to maximize participation, I conducted a sensitivity analysis on all twelve questions. I found that I could eliminate five questions from consideration due to their relatively small impact on the results. Once I determined the right questions to ask, based upon low confidence in my initial answers and an understanding of the level of sensitivity each question produced relative to the outcomes in ORGCON, I was ready to survey personnel in the Marine Corps operating forces.

C. SURVEY OF USMC PERSONNEL

This thesis uses a survey as a quantitative means to inform both my inputs in ORGCON and the Star Model analysis of the MEF CE's organizational fitness for OIE. Section C details the purpose, structure, population, and sample size of the survey.

1. Survey Purpose and Structure

The survey's initial purpose was to confirm the inputs to ORGCON questions that were of extreme importance (i.e., organizational goals) or to gain consensus from experts for questions that I remained less than 75% confident of following an extended literature

review. However, throughout the process, I found preliminary results that I wanted to explore further, causing me to add questions to the survey.

To maximize survey participation, I decided to keep the survey short, leading to a total of sixteen questions. The questions included a consent question, seven questions supporting the inputs to the ORGCON simulation, five questions supporting ORGCON's preliminary results that would be explored further in the Star Model analysis, and three questions to provide context regarding the survey population (i.e., rank, military occupational specialty [MOS], experience).

Given the technical terminology embedded in the ORGCON questions, I converted some terms into language that would be better understood in the Marine Corps community. Research shows that use of "workplace idioms, not organizational jargon" (Levitt, 2012, p. 61) work better for tools used to support organizational design. However, I carefully ensured no change in the meaning of any of the questions. Where this was not possible due to difficulty in translation, I provided definitions for any terms that might confuse survey participants. All survey questions and definitions are located in Appendix D.

I delivered the web-based survey via email. The survey was stored on a government owned, managed, and password-protected server to insure the privacy of the participants.

2. Survey Participant Population

This section details the selection criteria and method of execution for the survey participants. Given that the focus of analysis in ORGCON is a MEF CE, I required experience planning or executing MEF-level exercises or operations for survey participation. Initially, I levied the second requirement to limit the population to the grades O-4 to O-6 to ensure the required level of expertise. However, I changed this consideration and opened the population to Chief Warrant Officers (CWOs), O-3s (given the fact that a lot of the SEP billets are filled by O-3s), and civilians (both contractors and GS employees) with MEF experience. The two requirements together ensured proper expertise and experience of the survey population.

Survey questions and protocol are subject to the NPS Institutional Review Board (IRB), the Marine Corps IRB, and the Marine Corps Survey Program. This survey received approvals from all three organizations prior to its execution. In accordance with those authorities' regulations, I personally invited survey participants to volunteer and those volunteers received no undue Command influence to participate in the survey. The IRB also required participants to provide consent prior to participation in the survey. The participants' answers are anonymous, even to the researcher, and there will be no level of attribution to these personnel beyond the description of the population from which the participants were chosen.

I chose the participants from two separate populations. The first group consisted of personnel currently serving at I and II MEF CEs who fit the previously stated grade and experience requirements. The second group came from Marine Corps students from NPS with the grade of O-4 or above who previously met the MEF experience requirement prior to their assignment at NPS.

3. Survey Sample Size

The sample size of the actual participants in the survey included 54 Marines and civilians all fitting the previously mentioned descriptions for MEF CE experience and grade, which represents approximately 11% of the applicable population.

D. SEMI-STRUCTURED INTERVIEWS OF USMC PERSONNEL

This study uses a semi-structured interview as a second qualitative approach to collect information used to assess the MEF CE's organizational fit for OIE. Section D details the purpose, structure, population, and sample size of the interviews.

1. Purpose and Structure of the Interviews

The purpose of the semi-structured interview process is to provide a second qualitative set of metrics to analyze during the Star Model analysis (presented in Chapter II) as a framework to examine the MEF CE organization. The *MAGTF IEO COE* (USMC, 2017c) and subsequent bulletin for creation of the MIG (USMC, 2017e) addressed the strategy and structure categories of the Star Model. However, neither document provided

direction or instructions that addressed the processes, rewards, or people categories of the model. The interview questions aimed to identify the areas of concern with each category and provide courses of action to address these issues.

My reviews of Marine Corps doctrine, documents, and strategy were very valuable for understanding the MEF CE and how they would operate in the IE, but it could only take my understanding so far. To collect additional information regarding the processes and procedures required at the MEF to conduct OIE, I set out to interview professionals in the operating forces with MEF CE experience.

I conducted the majority of the interviews face-to-face, though I conducted several via video telephone conference (VTC) due to availability. The IRB required consent prior to the start of the interview process, which I obtained prior to the start of each interview. I generally conducted the interviews in private, they lasted from 30 to 90 minutes, and I took hand written notes for later analysis. The interviews were semi-structured, consisting of twenty-seven planned questions and in almost all cases led to follow on questions. I produced different question sets based upon different target populations. All planned interview questions are located in Appendix E.

2. Interview Population

The interview process was deigned to interview two separate populations. The first population consisted of professionals whose jobs entailed producing or integrating doctrine or concepts regarding OIE at the service-level. There are three units in the Marine Corps who match this description: the office of the Deputy Commandant for Information (DC I), Information Warfare Integration Division (IWID), and the Marine Corps Information Operations Center (MCIOC). The Office of the DC I is a three-star organization which serves as the advocate for all aspects of information warfare capability resident to the Marine Corps. IWID falls under the Deputy Commandant for Combat Development and Integration (CD&I). IWID is led by a Marine Corps Colonel whose responsibility is to integrate all aspects of information warfare to include concept and doctrine publication. MCIOC is also led by a Marine Corps Colonel and is charged with instituting the Marine

Corps' Information Operations Program. Interview participants in this population ranged from O-3 to O-9 (majority were O-4 to O-6) and several of their civilian equivalents.

The second population consisted of a broad representation of the various entities representing the MEF CE. I specifically targeted units impacted greatly by the new reorganization of the MIG. Those entities are:

- MEF CE Staff Sections—G-2, G-3, G-5, G-6, Communications Strategy
- MIG Personnel—Commanding Officer, S-2, S-3
- MIG Battalions Personnel—Intelligence Battalion, Radio Battalion, and Communications Battalion (Operations and Commanding Officers)

Interview participants in this population were CWO-4, O-3 to O-8 (majority were O-4 to O-6), and a civilian equivalent.

Interviews fell subject to the same approval authorities listed for the survey. I received approval from each institution prior to the execution of the interviews. In most cases, I selected the interview participants based upon their billet and grade. Selection was also contingent upon my ability to contact personnel in the chosen population and the availability of those personnel on the days of my site visits. However, I selected some personnel based on referrals from other interview participants.

3. Interview Sample Size

The sample size of the actual participants in the semi-structured interview process included 42 Marines and civilians all fitting the previously mentioned descriptions for MEF CE experience and grade, which represents approximately 20% of the applicable population.

E. ANALYSIS OF THE DATA

This thesis analyzed three separate, but related collections of data: the analysis of ORGCON, the analysis of the Marine Corps survey, and the analysis of the Marine Corps interviews. Section E details those three analyses.

1. Analysis of ORGCON Data

The ORGCON analysis began with identification and justification of the inputs. Based on the inputs, ORGCON executed its rule-sets and provided a listing of the MEF CE's current strategic and design factors, multiple categories of misfits within the MEF CE, and recommendations to remove those misfits. I analyzed ORGCON's recommendations to remove misfits based upon my experience in the Marine Corps and my review of organizational design literature and Marine Corps doctrine and concepts. This analysis is detailed in Chapter V of this thesis.

2. Analysis of Marine Corps Survey Data

The on-line Marine Corps survey produced quantitative data that supported both qualitative research methods: ORGCON and the Star Model analysis. The survey software provided the responses for each question. I evaluated the responses for those questions aimed at supporting the inputs to ORGCON and used them to inform the ORGCON analysis. I evaluated the responses for those questions used to support the Star Model analysis and used them to inform the Star Model analysis. This data from this survey is used to support both Chapters V and VI.

3. Interviews and the Star Model Analysis

Marine Corps doctrine and concepts, MEF CE SOP, and the interviews produced a rich database regarding the IE and the organization of the MEF CE. Regarding the interviews, I organized the data by question and design category from the Star Model and used the data to identify the most troubling areas of organizational design at the MEF CE. I looked at the themes for each question and conducted a content analysis. Consensus was helpful to identify key content related to the five categories, but lack of consensus was just as valuable to identify areas that lacked process controls, an adequate rewards system, or a lack of specificity regarding the people in the organization. I explored the causes of these areas of concern and developed possible courses of action to alleviate those problems.

V. ORGCON ANALYSIS

In Chapter IV, I presented the method for this thesis to include two methods of analysis. Chapter V examines the ORCGON method of analysis. I utilized the ORGCON 9.1 expert system to provide a qualitative analysis of the organizational fitness of the Marine Expeditionary Force Command Element (MEF CE). ORGCON presents questions about an organization's strategy and structure and utilizes the answers to assess total organizational fitness. Organizational fitness is then presented to the user as an output report for their chosen focus of analysis. ORGCON allows a user to

> review and evaluate the detailed recommendations and interpret their impact on the particular case. [ORGCON] is a decision support system and it requires that the [user] contribute information to the decision-making process. [ORGCON] is not a "black box," where information that is entered is magically transformed into the best organizational design for a given [focus of analysis]. Moreover, decision makers may choose to accept or reject some of the [ORGCON] conclusions based on their understanding of the organization's situation. (EcoMerc, 2015)

ORGCON is a useful tool that provides a macro-level analysis of an organization's overall organizational fitness (Burton & Obel, 2006). That analysis should be tempered by experience and judgment. Chapter V revisits the focus of analysis for the ORGCON simulation, details the inputs used for the MEF CE scenario in the ORGCON 9.1 simulation software, reviews the categorization of current and recommended organizational factors at the MEF CE, and provides identification and analysis regarding strategic, contingency, and organizational design fitness at the MEF CE.

A. FOCUS OF ANALYSIS

The focus of analysis for the ORGCON simulation software is the MEF CE. The MEF CE includes the MEF CE staff, the MIG, and its subordinate battalions. I examine the MEF CE in an environment where it is deployed in combat operations against a peer competitor. I chose this focus of analysis for several reasons: 1) it is the most difficult scenario to plan for, 2) it follows the guidance provided by the current National Defense Strategy, *The MOC*, and *MAGTF IEO COE*, and 3) the organizational change to the MEF

CE has already been directed. It would be counterproductive to analyze older or different organizations in the Marine Corps when the newness of the current organization, to include the addition of the MIG, demands further analysis.

B. INPUTS TO ORGCON'S MEF CE ANALYSIS

ORGCON 9.1 poses 77 questions, which are grouped into six broad categories: goals; environment and strategy; structure; process and people; size and age; and coordination and control. The questions ask for a subjective assessment of various organizational aspects of the MEF CE. The majority of the answers range from low to high. The user has the opportunity to rate their confidence in their answer, which is accomplished by assigning a certainty factor. The certainty factor in ORGCON 9.1 ranges from 0% to 100% in increments of 25%. Section B details my inputs to model the MEF CE in ORGCON 9.1 to include the question, the chosen answer, the assessed certainty factor, and whether the question was posed on the survey. Appendix F provides more detail for the selection of inputs to include the question, definition of terms, answer, reasoning, and certainty factor chosen.

1. Goals

I introduced an overview of the goals in the literature review. I expand on that overview in this chapter to point out the importance of correctly identified goals to the accuracy of the expert system. In accordance with the Multi-Contingency Diagnosis and Design Model, goals are the foundation of the model (Burton & Obel, 2004). As such, I included both goal questions proposed by ORGCON 9.1 in the survey described in the Chapter IV. Full results of the survey are located in Appendix G. Table 1 lists the MEF CE goal selections.

Table 1. ORGCON Inputs—MEF CE Goals

Question	Chosen Level	Certainty Factor	Survey Question
What is the goal with respect to efficiency?	Medium	75%	Yes
What is the goal with respect to the degree of effectiveness?	Medium High	75%	Yes

My initial responses to the goal questions were medium high for efficiency and high for effectiveness. Although I adjusted my inputs based upon the results of the survey, the survey confirmed my conclusion that, while the MEF CE cares about both, it is more concerned about performance than efficiency. This point not only aligns with Marine Corps doctrine, it also matches the newly appointed Deputy Commandant for Information's (DC I) intent from his Draft Campaign Plan: to "enable the Marine Corps to win in any information-contested environment" by increasing "MAGTF lethality, survivability, decision making, tempo, and influence" (O'Donohue, 2018, p. 13). All of these factors are performance-driven.

2. Environment and Strategy

An understanding of the environment in which the MEF CE competes is essential to developing a strategy and ultimately meeting the organization's goals. Section 2 details the environment and strategy considerations and the answers I chose for the MEF CE scenario in ORGCON.

a. Environment

I assessed the MEF CE environment as highly complex, uncertainty and equivocality as high, and hostility as extreme. This intense environment exists in large part due to setting the adversary as a peer competitor with whom the MEF CE is engaged in full combat operations. I specifically chose this environment to match the 2018 National Defense Strategy (Mattis, 2018) and because it is arguably the most difficult environment to fight. My selections for the MEF CE environment are listed in Table 2.

Table 2. ORGCON Inputs—MEF CE Environment

Question	Chosen Level	Certainty Factor	Survey Question
Is the organizational environment simple or complex?	Highly Complex	100%	No
What is the level of uncertainty in the environment?	High	100%	No
Is the equivocality of the environment high or low?	High	100%	No
Is the organizational environment hostile - how tough is the competition?	Extreme	100%	No

b. National Culture

National culture is the first element of an organization's strategy presented in ORGCON. "It affects how organizations choose to organize themselves and how organizational members interact and react in given situations" (EcoMerc, 2015). My inputs to the national culture section are listed in Table 3.

Table 3. ORGCON Inputs—MEF CE National Culture

Question	Chosen Level	Certainty Factor	Survey Question
The power distance is medium?	Medium High	75%	No
The level of uncertainty avoidance is?	Medium Low	75%	No
The level of masculinity is?	Medium High	100%	No
The level of individualism is?	Medium Low	75%	No

Note: National culture is an organizational term. This section refers to the culture of the focus of analysis, thus it is actually referring to the MEF CE culture.

c. Strategic Exploitation and Exploration

Strategic exploitation and exploration is the second aspect of an organization's strategy presented in ORGCON. Exploration measures the amount of "search, variation, risk taking, and innovation" (Burton et al., 2006, p. 35) within the MEF CE. Exploitation measures "refinement, efficiency, selection, and implementation" (Burton et al., 2006, p. 36) by the MEF CE. The two measurements work in concert to help define the strategy of the organization and are directly linked to its goals. I lacked full confidence in my initial inputs to three ORGCON questions in this section, and thus included those questions in the survey. Survey results caused me to adjust my selection regarding product innovation from

medium low to medium. The survey confirmed my initial inputs to the other two questions. Table 4 lists the diagnostic questions and my inputs for strategic exploitation and exploration.

Table 4. ORGCON Inputs—MEF CE Strategic Exploitation and Exploration

Question	Chosen Level	Certainty Factor	Survey Question
Does the organization have a high or low product innovation?	Medium	75%	Yes
Does the organization have a high or low process innovation?	Medium	100%	No
Does the organization have a high or low concern for quality?	Medium High	75%	Yes
How does the organization's price level compare to its competitors?	Medium High	75%	Yes
Does the organization operate in an industry with high or low capital requirements?	Medium High	100%	No

d. Diversity

Diversity is the third strategic aspect presented in ORGCON. Diversity refers to the range of products, services, and markets related to the MEF CE (EcoMerc, 2015). The number of each of these attributes helps to define the strategy of the organization. Table 5 lists my inputs for the MEF CE's diversity levels.

Table 5. ORGCON Inputs—MEF CE Diversity

Question	Chosen Level	Certainty Factor	Survey Question
Does the organization have many different products?	Many	100%	No
Does organization operate in many or few different markets?	Some to Many	75%	No
Does the organization operate in more than one country?	Yes, < 25%	75%	No
Does the organization have many different products in the foreign market?	Few	75%	No

3. Structure

Section 3 lists the structural inputs for ORGCON to include the current configuration, complexity, geography, and knowledge of the organization.

a. Current Configuration

Chapter II lists four primary structural configurations for an organization: simple, bureaucracy, divisional, or matrix. Prior to the reorganization, the MEF CE was already a matrix organization given the delicate relationship between the older MHG Command construct concerning its subordinate battalions and the MEF staff sections. The literature review explained how the MEF CE staff sections maintain staff cognizance over their specific functional battalions falling under the MHG. The previous relationship between the MHG and its subordinates was often defined as an administrative and logistical relationship only. When the MHG became the MIG, the normal Command relationships between the MIG CO and its subordinate Battalions were formalized with expressed operational ownership. However, most of those subordinate battalions still maintain a MEF CE staff member that provides staff cognizance and direction during combat operations. An example of this relationship is illustrated by the Communication Battalion. The Communication Battalion reports directly to the MIG Commander for a variety of functions, but it must also provide manpower and support and receive taskings from the MEF G-6 when operationally employed. This multi-directional relationship continues because the MEF G-6 is the functional communications lead for the MEF, which results in the MEF CE designation as a matrix organization. The MEF CE shares many attributes of a bureaucracy, but not enough to identify it appropriately. Therefore, I selected N/A for that configuration question. However, I also conducted a sensitivity analysis with various answers to that question and found no major changes to the output of conclusion of the MDEF CE scenario. The remainder of my selections for inputs into the MEF CE scenario are listed in Table 6 and their reasoning listed in Appendix F.

Table 6. ORGCON Inputs—MEF CE Current Configuration

Question	Chosen Level	Certainty Factor	Survey Question
What is the organization's current organizational configuration?	Matrix	100%	No
Is the current configuration a bureaucracy?	N/A	0%	No
What is your organization's degree of IT-infusion?	High	75%	No
What is your organization's degree of virtualization?	Medium	75%	No
What is the current configuration's degree of internationalization?	Transnational	100%	No
What is the organization's degree of local responsiveness?	Low	75%	No
What is your organization's degree of optimal sourcing?	High	75%	No

b. Current Complexity

The amount of complexity an organization must manage results from the number of variables in the environment that have the ability to impact the operations of the organization (EcoMerc, 2015). These environmental variables are external influences that suggest the appropriateness of the internal design considerations relating to complexity in the organization. Table 7 lists my inputs to the MEF CE scenario in ORGCON 9.1.

Table 7. ORGCON Inputs—MEF CE Current Complexity

Question	Chosen Level	Certainty Factor	Survey Question
How many different job titles are there?	Great Number	100%	No
What proportion of employees hold advanced degrees or have many years of specialized training?	11-20%	75%	No
How many vertical levels separate the chief executive from those employees working at the bottom of the organization?	9-12	100%	No
What is the average number of vertical levels for the organization?	6-8	75%	No
Including the main center, how many geographic locations are there where organization members are employed?	3-5	75%	No
What is the average distance of these outlying units from the organization's main center?	501-3500 Miles	75%	No
What proportion of the organization's total work force is located at these outlying units?	< 10%	100%	No

c. Geography

The geography of an organization depends upon the physical locations of the entities that impact operations in the organization. The majority of the MEF CE is typically located in one geographic position during combat operations. However, multiple elements

work around the world to support the entirety of the MEF and its ability to function away from the home station. A good example of geographical separation of a MEF CE function and personnel is a logistics liaison at a port of entry responsible for tracking equipment and personnel that flow into the theater of operations. My geography inputs to the ORGCON simulation are listed in Table 8.

Table 8. ORGCON Inputs—MEF CE Geography

Question	Chosen Level	Certainty Factor	Survey Question
To what extent are the units of your firm located close to corporate headquarters or far from corporate headquarters?	Close	75%	No
To what extent does your firm consolidate work in one region of the world or does it distribute its work to many locales?	Medium Consolidation in One Region	75%	No

d. Knowledge

Knowledge in ORGCON is a compilation of the total size of the data an organization collects, stores, processes, and disseminates as well as the tacit nature of information in the organization. "Tacit knowledge is characterized by casual ambiguity and difficulty of codification" (EcoMerc, 2015). My assessments of both knowledge factors are high due to the complexity of both the enemy and the environment and are located in Table 9.

Table 9. ORGCON Inputs—MEF CE Knowledge

Question	Chosen Level	Certainty Factor	Survey Question
What is the overall volume of data that the organization must collect, process, and store on a regular basis?	High	75%	No
What is the tacit nature of the information that the organization must collect, process, and store on a regular basis?	High	75%	No

4. Process and People

The process and people section of ORGCON includes the technology, climate, and leadership of the organization. Section four describes each of these areas and provides my answers to the proposed questions.

a. Technology

Technology characterizes the "information, equipment, techniques, and processes required to transform inputs into outputs" (EcoMerc, 2015). ORGCON measures the type, routineness, divisibility, and dominance of the technology, as well as whether an organization uses and advanced information system. The type of technology used at the MEF CE was difficult to ascertain so I included that question in my survey. Table 10 details my inputs to the technology section of ORGCON.

Table 10. ORGCON Inputs—MEF CE Technology

Question	Chosen Level	Certainty Factor	Survey Question
What is the major activity of the organization?	Service	75%	No
What kind of technology does the organization have?	A Process Production	75%	Yes
Does the organization have a routine technology?	Low to Medium	75%	No
Is the technology divisible?	Medium Little	100%	No
Does the organization have a strong or weak dominant technology?	Average	75%	No
Does the organization use or plan to use an advanced information system?	Yes	100%	No

b. Organizational Climate

Organizational culture describes the organization's internal environment that "a) is experienced by its members, b) influences their behaviors, and c) can be described in terms of the values of a particular set of characteristics (or attitudes) of the organization" (Burton et al., 2006, p. 140). Table 11 details my organizational climate inputs into the ORGCON expert system in the MEF CE scenario.

Table 11. ORGCON Inputs—MEF CE Organizational Climate

Question	Chosen Level	Certainty Factor	Survey Question
The level of trust - sharing, openness, confidence - is:	Medium High	75%	No
The level of conflict - disagreement, friction - in this organization is:	Medium Low	75%	No
The employee morale - confidence, enthusiasm - in this organization is:	High	75%	No
Rewards are given in an equitable fashion?	Medium to Higly Equitable	100%	No
The organization's resistance to change is?	Medium	75%	No
The leadership credibility - respect, inspiration, acceptance - is:	Medium High	75%	No
The level of scapegoating - shifting of responsibility for actions which fail - is:	Medium Low	75%	No

c. Leadership Style

Leadership style is difficult to analyze. A MEF CE is led by a three-star general that rotates every two years. Each leader possesses their own leadership style. Therefore, I generalized the type of leader that the Marine Corps typically puts into Command supported by Marine Corps ideals contained in doctrine rather than focusing on a singular current leader. Table 12 details my inputs into the leadership section of the MEF CE scenario.

Table 12. ORGCON Inputs—MEF CE Leadership Style

Question	Chosen Level	Certainty Factor	Survey Question
With respect to centralization/decentralization. What kind of decisions does the top management prefer to make?	General and Some Low Operating Decisions	75%	No
Does the management prefer to make long-term decisions or short-term decisions?	Long Term and some Short Term Decisions	75%	No
Does top management prefer to use very detailed or very aggregate information when making decisions?	Aggregate Information	75%	No
Are management proactive or reactive on taking action?	Medium Proactive / Anticipating Future Events	75%	No
What is top management's attitude towards risk?	Medium Risk Propensity	100%	No
What kind of motivation and control does top management prefer?	Motivation Through Inspiration and Some Control	75%	No

5. Size and Age

Both size and age are two variables that influence organizational structure. My inputs to the size and age questions for the MEF CE are listed in Table 11.

Table 13. ORGCON Inputs—MEF CE Size and Age

Question	Chosen Level	Certainty Factor	Survey Question
How many employees does the organization have?	4,000	100%	No
How old is the organization?	Young	75%	No
What kind of ownership does the organization have?	Public Sector / Controlled by Bureaucracy	100%	No

6. Coordination and Control

Coordination and control mechanisms consist of the level of centralization and formalization, as well as the incentive structure in the organization. Section 6 details my inputs to the coordination and control mechanisms for a MEF CE.

a. Current Centralization

As discussed in Chapter II, centralization refers to who in the organization makes different levels of decisions. If upper management makes most decisions, the level of centralization is high. If there is more delegation in decision making, the level of centralization is lower. Table 14 lists my inputs for the current centralization of a MEF CE.

Table 14. ORGCON Inputs—MEF CE Current Centralization

Question	Chosen Level	Certainty Factor	Survey Question
How much direct involvement does top management have in gathering the information they use in making decisions?	Some	75%	No
To what degree does top management participate in the interpretation of the information input?	40-60%	75%	No
To what degree does the top management directly control the execution of decisions?	0 - 20%	100%	No
How much discretion does the typical middle manager have in establishing his or her budget?	Some	75%	No
How much discretion does the typical middle manager have in determining how his or her unit will be evaluated?	Some	75%	No
How much discretion does the typical middle manager have in hiring and firing personnel?	Little	100%	No
How much discretion does the typical middle manager have over personnel rewards - (i.e., salary increases and promotions)?	Some	100%	No
How much discretion does the typical middle manager have over purchasing equipment and supplies?	Some	100%	No
How much discretion does the typical middle manager have over establishing a new project or program?	Some	75%	No
How much discretion does the typical middle manager have over how work exceptions are to be handled?	Some	100%	No

b. Current Formalization

Formalization is concerned with the coordination of information through rules and procedures. My inputs for current formalization of a MEF CE are listed in Table 15.

Table 15. ORGCON Inputs—MEF CE Current Formalization

Question	Chosen Level	Certainty Factor	Survey Question
Written job descriptions are available for?	All employees, Including senior management	100%	No
Where written job descriptions exist, how closely are employees supervised to ensure compliance with standards set in the job description?	Moderately Closely	75%	No
How much latitude are employees allowed from the standards?	Very Little	100%	No
What percentage of non-managerial employees are given written operating instructions or procedures for their job?	0 - 20%	75%	No
Of those managerial employees given written instructions or procedures to what extent are they followed?	No written instructions	75%	No
To what extent are supervisors and middle managers free from rules procedures, and policies when they make decisions?	Some	75%	No
What percentage of all the rules and procedures that exist within the organization is in writing?	> 80%	100%	No

c. Current Incentives

Incentives influence motivation and individual behavior. Incentives at a MEF CE, are difficult to determine, as is the case with most organizations, because both individual and group incentives exist. Therefore, I included the incentive question in my survey. I initially chose individual results as the underlying incentive at the MEF CE. However, I changed my response to group-based results due to the outcome of the survey.

Table 16. ORGCON Inputs—MEF CE Current Incentives

Question	Chosen Level	Certainty Factor	Survey Question
What is the basis for designing incentives?	Group-Based Results	75%	Yes

C. CATEGORIZATION OF CURRENT STRATEGIC AND DESIGN FACTORS

Once I enter inputs into the MEF CE scenario in ORGCON, the simulation calculates the current strategic and organizational design factors for the organization based upon its multi-contingency-based rule sets. Section C details the categorization of the MEF CE's current organizational factors.

1. MEF CE Current Strategic Factors

The output report for ORGCON's MEF CE scenario listed most of the MEF CE's current strategic factors explicitly. However, I found several of the factors in the misfit section of the ORGCON output, which did not provide a certainty factor associated with its strategic factor. In this case, I marked the certainty factor as N/A. ORGCON's assessment of the current strategic factors for the MEF CE are located in Table 17.

Table 17. MEF CE Current Strategic Factors

Strategic Factor	Calculated Value	Certainty Factor
Leadership Style	Leader	42%
	Maestro	42%
Organizational Climate	Group Climate	74%
Size	Large	100%
Skill Capabilities	Low Level of Education and Training	N/A
Environment	Unpredictable	N/A
Technology	Non-Routine	N/A
Strategy	Analyzer with Innovation	72%
	Analyzer without Innovation	70%
	Prospector	66%

Note: Definitions for the calculated value terms can be found in Appendix H: Full ORGCON Output Report for the MEF CE Scenario.

2. MEF CE Current Organizational Design Factors

The output report for the ORGCON MEF CE scenario listed the MEF CE's calculated current organizational design factors and their associated certainty factors. Those factors are listed in Table 18.

Table 18. MEF CE Current Organizational Design Factors

Current Organizational Design Factors	Calculated Value	Certainty Factor
Configuration	Matrix	100%
Geographical Distribution	International	60%
Organizational Complexity	Medium	85%
Horizontal Differentiation	Medium	100%
Vertical Differentiation	Medium	100%
Spatial Differentiation	Medium	100%
Formalization	Medium	85%
Centralization	Medium	85%
State of Knowledge	Not Determined	100%
Information System	Relationship Driven	60%

D. ORGANIZATIONAL MISFITS

Chapter II introduced the various types of misfits in multi-contingency theory. Section D contains ORGCON's output recognizing three types of misfits: strategic, contingency, and design misfits from the MEF CE scenario.

1. MEF CE Strategic Misfits and Recommendations

ORGCON's MEF scenario recognized three strategic misfits. Strategic misfits occur in an organization when its strategic factors do not work well with the other strategic factors. To achieve organizational fitness, the organization must change one or more strategic factors.

a. Group Climate

The first strategic misfit occurred as a result of the MEF CE possessing both a group climate and a very unpredictable environment. These two strategic factors do not fit well together because a group climate typically leads to a high resistance to change. On the other hand, change is inevitable in an unpredictable climate. Given the chosen scenario for this thesis, it is highly unlikely that the MEF CE will be able to significantly change their environment. Further, an unpredictable environment nests well with the goals of the organization (Burton et al., 2006). Therefore, to maximize organizational fitness, the MEF

CE will need to adjust their organizational climate. Instead, a developmental climate would work well at a MEF CE. The developmental climate still possesses the low tension of the MEF CE, but at the same time it promotes a greater readiness to incorporate change in the organization (Burton et al., 2006). Figure 15 details the different types of climates and their dimensions.

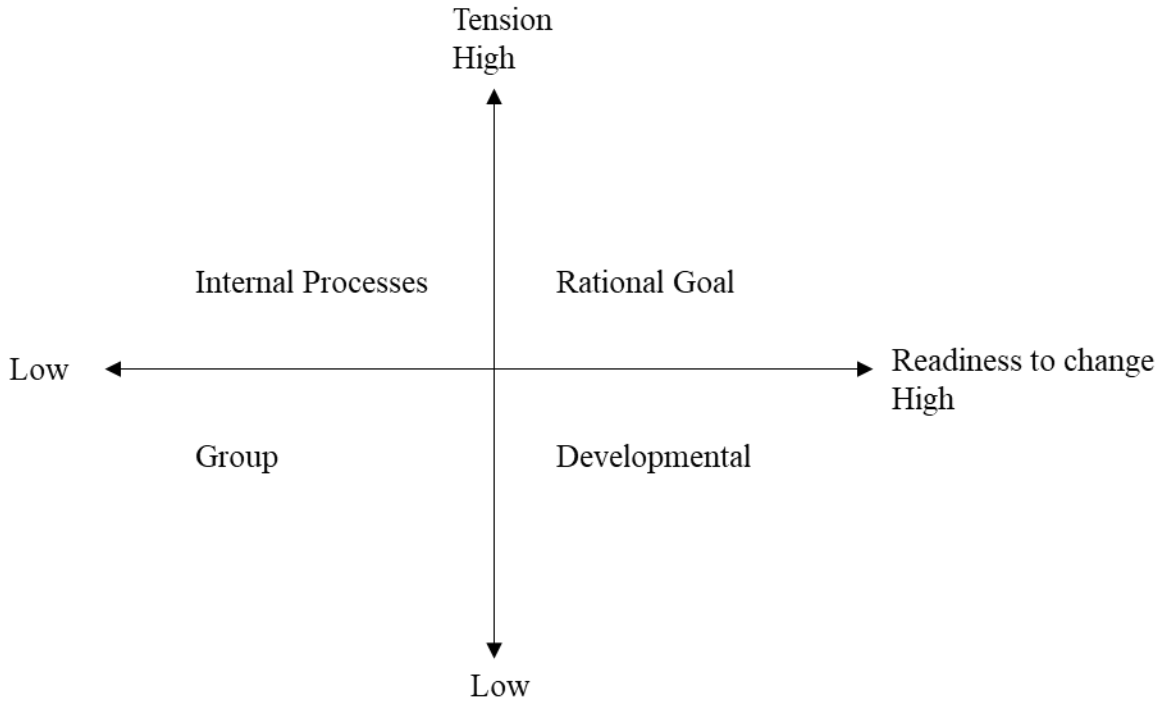

Figure 15. Organizational Climate Space. Source: Burton et al. (2006, p. 148).

To enact this change, the organization must focus externally rather than internally. "One approach is to take up an external challenge or create an outside competitor" (EcoMerc, 2015). Although ORGCON indicates that this will take management's attention away from their focus for some time, in this case, I disagree. I argue that, during combat operations, the MEF CE will naturally move towards a developmental climate and away from a group climate. Leaders in the MEF CE organization should be aware of this required shift and look for ways to enhance the change. The MEF CE can achieve this effect by ensuring their personnel are willing to adapt their processes and products to the changing environment and the enemy's actions within it.

The second strategic misfit identified by ORGCON occurred as the result of possessing both a group climate and an analyzer with innovation strategy. ORGCON recognized three strategies that the MEF CE may employ in the output for the MEF CE scenario simulation: analyzer with innovation, analyzer without innovation, and prospector. The two analyzer strategies fit well with both effectiveness and efficiency as prominent goals. The analyzer with innovation strategy focuses more on effectiveness than efficiency, just as the MEF CE does, so I would argue the analyzer with innovation strategy is more correct than the analyzer without innovation strategy. However, either could work. The prospector strategy fits best with a goal of maximizing effectiveness, which also makes it viable due to the MEF CE's primary goal centering on effectiveness. Table 19 illustrates how specific strategies fit with the organizational goals of efficiency and effectiveness.

Table 19. Fit between Strategy and Organizational Goals. Source: Burton et al. (2006, p. 34).

Strategy Types	Reactor	Defender	Prospector	Analyzer with Innovation	Analyzer without Innovation
Organizational Goals	Neither	Efficiency	Effectiveness	Efficiency and Effectiveness	

Note: The analyzer with innovation strategy is more closely linked to effectiveness than efficiency.

It is clear from Table 19 that the goals and the strategies assigned by the MEF CE scenario in ORGCON are a good fit. Therefore, the MEF CE may not need to adjust the strategy any further. Instead, the MEF CE should adjust the group climate to a developmental climate for the same argument and in the same manner detailed in the previous paragraph. Evolving a developmental climate would eliminate the misfit and bring goals, strategy, and climate into an overall better level of fitness, thus increasing performance at a MEF CE.

b. Education and Training

The third strategic misfit identified by the ORGCON simulation occurred as a result of a non-routine technology and a low level of education and training of the workforce of the MEF CE:

> This situation can create production and service difficulties which usually require an investment in education and training. A non-routine technology usually requires that individuals adapt work methods to the particular task at hand. Individuals must have a sufficiently high level of skill to make these adaptations. Low levels of education and training do better at routine tasks and technologies. With a non-routine technology and low level of education and training, new training will be required for the workforce. This training should emphasize individual responsibility and decision making for the quality of the product or service. E.g., it should provide new skills which permit the individual to take the initiative for action which meets the customers' requirements. (EcoMerc, 2015)

Figure 16 details the dimensions of an organization's technology as explained by Burton and Obel. The figure shows that ORGCON correctly identified the technology for the MEF CE as non-routine. The problems that the organization will face as a result of its environment are high and thus ill-defined, effecting problem analysis, while the exceptions that the MEF CE will face will also be high, effecting task variability. Therefore, it is not prudent to attempt to change the type of technology the organization faces. Instead, the MEF CE will have to raise the organization's level of education and training to navigate a non-routine technology and achieve strategic fit. Increasing education and training is particularly important for those individuals whose primary focus involves the information environment.

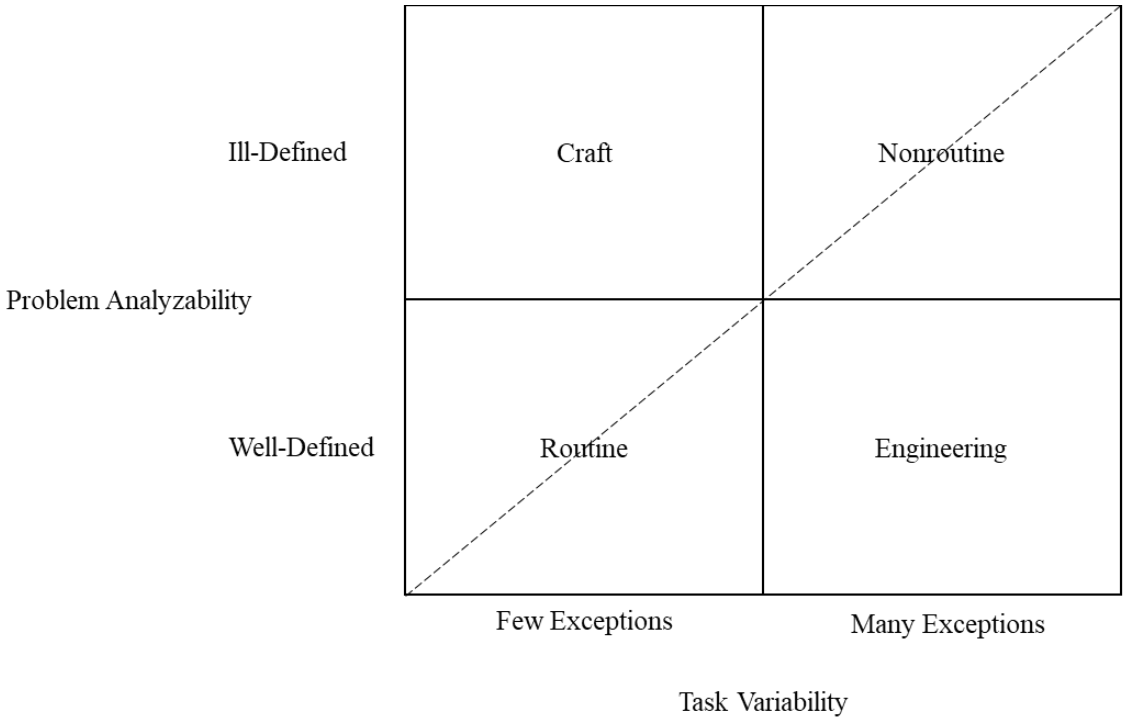

Figure 16. Dimensions of an Organization's Technology. Source: Burton and Obel (2004, p. 244).

2. MEF CE Contingency Misfits and Recommendations

The ORGCON simulation identified two contingency misfits for the MEF CE scenario. A contingency misfit is an "unbalanced situation" (EcoMerc, 2015) where the strategic factors of an organization do not match the organization's structure or design factors.

a. Group Climate

Group climate (strategic factor) and relationship-driven knowledge exchange (design factor) do not fit well together. "The group climate is too calm with too little aspiration for change to fit a relationship driven knowledge exchange structure" (EcoMerc, 2015). Although I have already determined that group climate is not a favorable strategic fit for the MEF CE, it is important to investigate whether the design factor, relationship-driven knowledge exchange, is also a mismatch for the MEF CE. Figure 17 details the possible information systems assignments for an organization. The information systems

assignments detail the manner in which personnel in the organization share information and knowledge. There are two contributing factors for assignment to an information space: the amount of information and the tacit nature of the information. "Tacit knowledge is characterized by causal ambiguity and difficulty of codification" (EcoMerc, 2015).

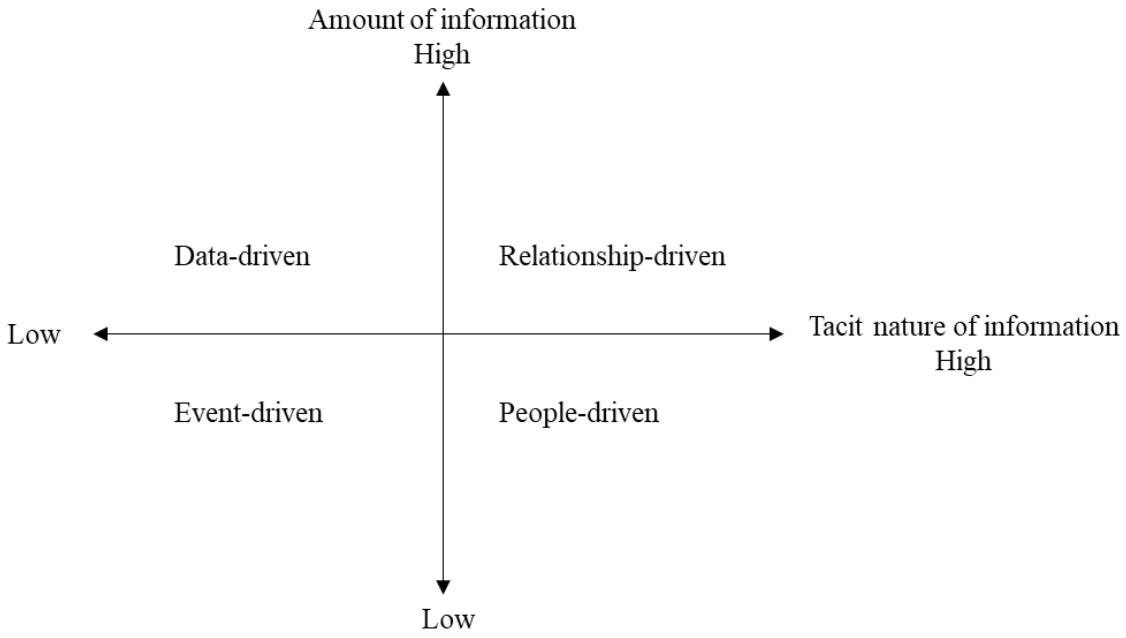

Figure 17. Information Systems Space. Source: Burton et al. (2006, p. 168).

Given the information contained in Figure 17, it is clear that the correct MEF CE information system has been identified by ORGCON. Due to the environment, tacit information is high for a MEF CE during combat operations against a peer competitor, particularly in the information environment. Therefore, the identified information system should not be changed. Instead, the MEF CE should again change the group climate in the organization. Further, a developmental climate would not produce a contingency misfit, further codifying that the MEF CE's best organizational climate fit is to advance a developmental climate.

b. Geographic Distribution

The leader leadership style (strategic factor) and an international geographic distribution (design factor) do not fit together well organizationally. "The required focus on delegation and risk taking of a leader suggest that the geographical distribution should not be international" (EcoMerc, 2015). Figure 18 demonstrates the different organizational categories for leadership style.

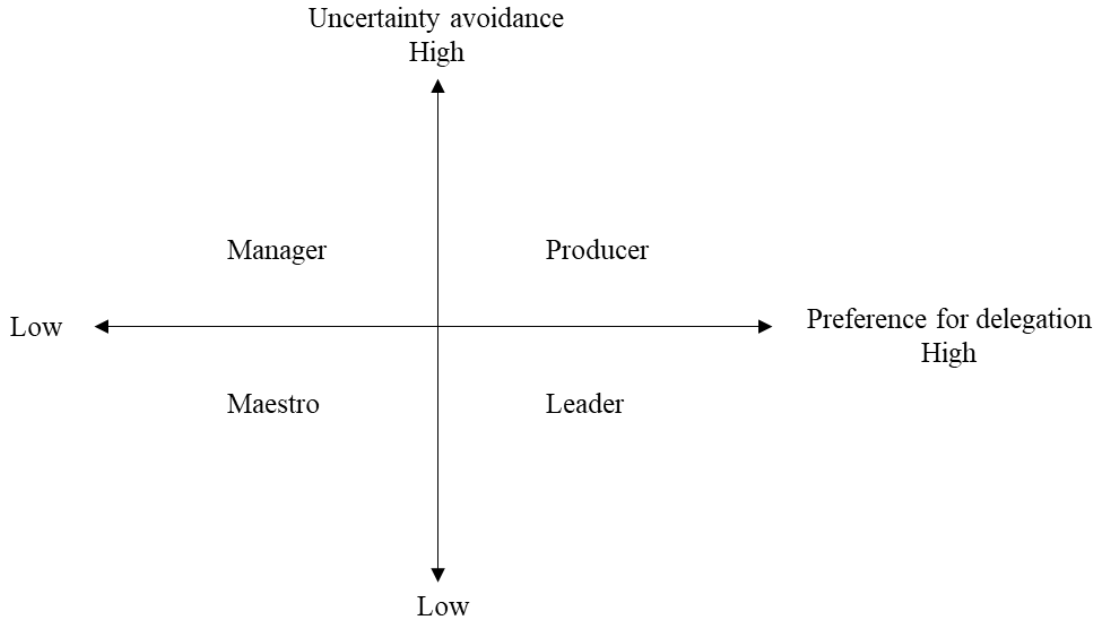

Figure 18. Leadership Style Space. Source: Burton et al. (2006, p. 137).

The current levels for leadership style at the MEF CE as identified by ORGCON are maestro and leader, both with a 42% certainty factor. Figure 18 shows that both a leader and a maestro leadership style possess a low uncertainty avoidance level. However, the two styles differ when comparing their preference for delegation. Although the MEF Commanding General routinely changes at the MEF CE, I argue that the Commanding General is more apt to possess a leader leadership style than a maestro leadership style because Marine leaders subscribe to centralized planning and decentralized execution (USMC, 2017d). This relationship demonstrates a preference for delegation found in the leader leadership style.

An organization's geographical design choices are located in Figure 19.

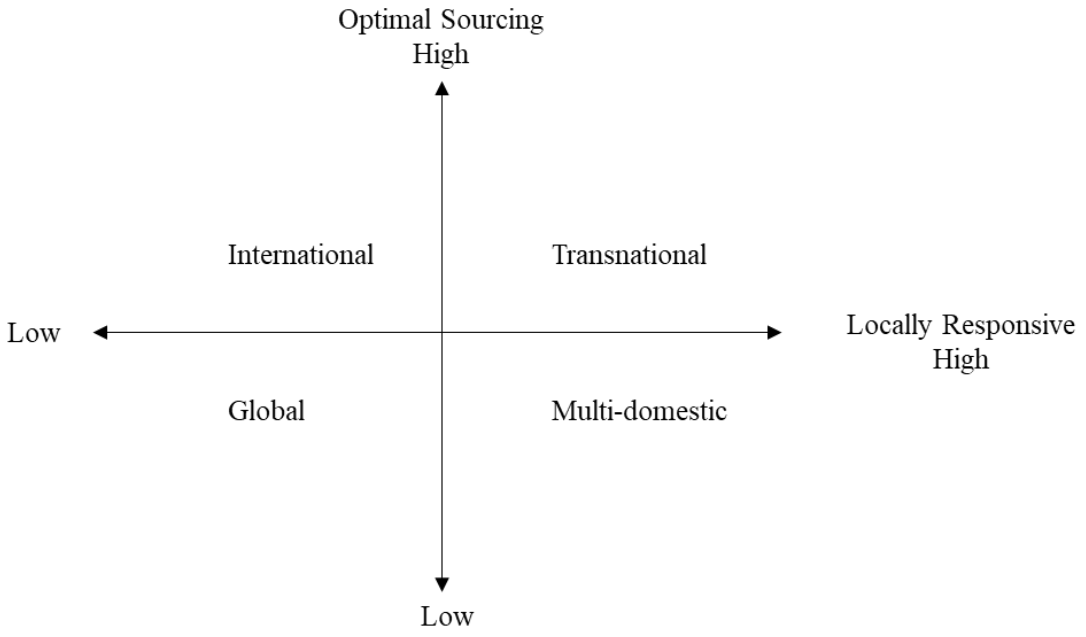

Figure 19. Geographical Design Choice Space. Source: Burton et al. (2006, p. 86).

Optimal sourcing and local responsiveness represent the tradeoffs for an organization's geographic design choice. "Optimal sourcing refers to the decision to locate operations in the place in the world that brings the greatest advantage to the firm in terms of customer contact, cost efficiency, [and] human resource skill needed" (Burton et al., 2006, p. 84). The MEF is a tactical organization, and its Command Element locates itself in the best possible position to accomplish its mission relative the enemy, its own friendly formations, and its sources of supply. Further, where the MEF CE would normally carry a disadvantage logistically due to its deployment forward, it compensates by carrying forward 60 days of logistics supplies when it deploys. Therefore, the optimal sourcing level for the MEF CE is high. "Local responsiveness refers to the decision to distribute work in many locales versus consolidating work in one or more centralized locations" (Burton et al., 2006, p. 85). Although the MEF CE distributes its personnel and work in many locales to satisfy work functions such as communications and logistics, that part of the organization located away

from the main element represents much less than ten percent of the total work and workforce. The remainder of the MEF CE is generally located within the same geographic area, thus performing the majority of its work in one centralized location. Therefore, the level of local responsiveness for the MEF CE is low. The categorization of optimal sourcing and local responsiveness levels leads to an international geographic design factor assignment. This analysis led to the same conclusion that the ORGCON simulation generated, which led to a contingency misfit.

The geographic-leadership style contingency misfit could exist for several reasons. I eliminated leadership style as a consideration, yet the international geographic design choice does not seem to fit. The most obvious reason for the misfit is that I inadequately categorized the answers to the questions in ORGCON that lead to assignment of the geographic design choice. This is certainly possible, but not probable, as the previous analysis led to the same conclusion. The second explanation for the misfit is harder to diagnose. ORGCON was generated from decades of empirical research predominantly using business organizations as units of analysis. It is possible, and I argue likely, that the considerations for geography within a military organization are not a good comparison to those considerations for a business organization. To determine the answer to this question, organizational theorists would need to publish many more empirical studies of military organizations. The final explanation for the contingency misfit is that it is accurate, and the MEF CE needs to adjust its geographical design choice to achieve better organizational fitness and ultimately increase the performance of the organization. This explanation deserves further analysis. On first look, given earlier analysis from this section, this explanation appears to be incorrect. Although consolidation of operations reduces local responsiveness, it will also allow the MEF CE to increase speed and tempo relative to the enemy by maintaining a quicker OODA loop (introduced in Chapter III). However, taking the fast pace and global nature of the information environment into account, perhaps I should view this problem through a new lens. Research states that a transnational geographic design choice fits best with a matrix structure (Burton et al., 2006), which I determined as the best structural fit for the MEF CE. This means that optimal sourcing remains high while I need to change the organization from a low to high level of local

responsiveness. In the information environment, this could simply mean the ability to detect and react along Marine Corps lines of communication. For example, a MEF's tactical communications networks at a port where critical supplies are flowing into theater are much more vulnerable to attack than those hardened communications nodes geographically closer to the enemy. Traditionally, these lines of communications located behind enemy lines have not been a major concern of a tactical unit such as a MEF CE. However, given the global nature of the information environment and the cyber-enabled capabilities of a peer adversary, it is increasingly more logical that the adversary strikes the MEF's critical vulnerabilities as opposed to fighting it head on. This line of thinking applies both the Marine Corps' doctrine of maneuver warfare (USMC, 1997) and the future operating environment to a peer adversary. This conclusion is not only logical, but probable. Therefore, the MEF CE, should takes steps to make an organizational change to its geographic design choice. Instead of international, the MEF CE needs to become transnational by increasing its local responsiveness.

3. MEF CE Organizational Design Misfits and Recommendations

ORGCON compares the current design choices with the recommended design choices to obtain design misfits. The current organizational design factors for the MEF CE were listed earlier in this chapter in Section C. Table 20 lists the recommended design factors for the MEF CE.

Table 20. ORGCON Recommended Organizational Design Factors

Organizational Design Factor	Calculated Value	Certainty Factor
Configuration	Simple	70%
	Matrix	69%
	Divisional	66%
	Functional	-37%
	Professional Bureaucracy	-37%
	Machine Bureaucracy	-100%
Organizational Complexity	High	81%
	Low	74%
Horizontal Differentiation	Low	74%
Vertical Differentiation	Low	77%
Formalization	Low	77%
Centralization	High	38%
Knowledge Exchange	Ad Hoc	20%
	Cellular	20%
Information System	Event Driven	20%
	People Driven	20%
Geographical Distribution	Global	20%
	Multi Domestic	20%
Span of Control	Narrow	18%
	Wide	11%
Incentives	Group Results	75%
	Individual Results	73%
Media	High Media Richness	97%
Coordination and Control	Professionalization	100%
	Meetings	98%

Note: I've changed the font of those organizational design factors lacking a high certainty factor.

a. Configuration Misfit

Many of the recommended results in the ORGCON output report consist of multiple choices that may lead to the best fit. This is expected because there are multiple design configurations that may fit given a certain situation. An organization and its environment are constantly changing, and thus so should its design. ORGCON's recommendation for the best structural configuration is slightly skewed by the extremely hostile environment that the MEF CE encounters in this scenario. However, given the size and complexity of the organization, a simple structure simply would not work, and I have eliminated it as a choice. The next best configuration, matrix, has almost the same certainty factor as the simple configuration. This matrix design choice is the best fit as previously stated. ORGCON also notes that the divisional function could work at the MEF CE in some situations as well, but I disagree. A divisional form implies that there is pooled interdependence in the MEF CE, which is not true. Divisional forms imply that each division of the organization can focus on its own work independently without significant information exchange with the other divisions in the organization. This is not true of the MEF CE; thus, the divisional form would not work. Also, as indicated by the results, functional, professional bureaucracy, and machine bureaucracy are definitely not good fits for the MEF CE's structural design choice either.

b. Knowledge Exchange Misfit

ORGCON listed knowledge exchange as an organizational misfit. However, upon further inspection, that is probably not the case. ORGCON could not determine the current knowledge exchange for the MEF CE given the input that I provided. This probably means that multiple inputs to ORGCON-produced questions fell into different areas of the knowledge exchange design spaces shown in Figure 20.

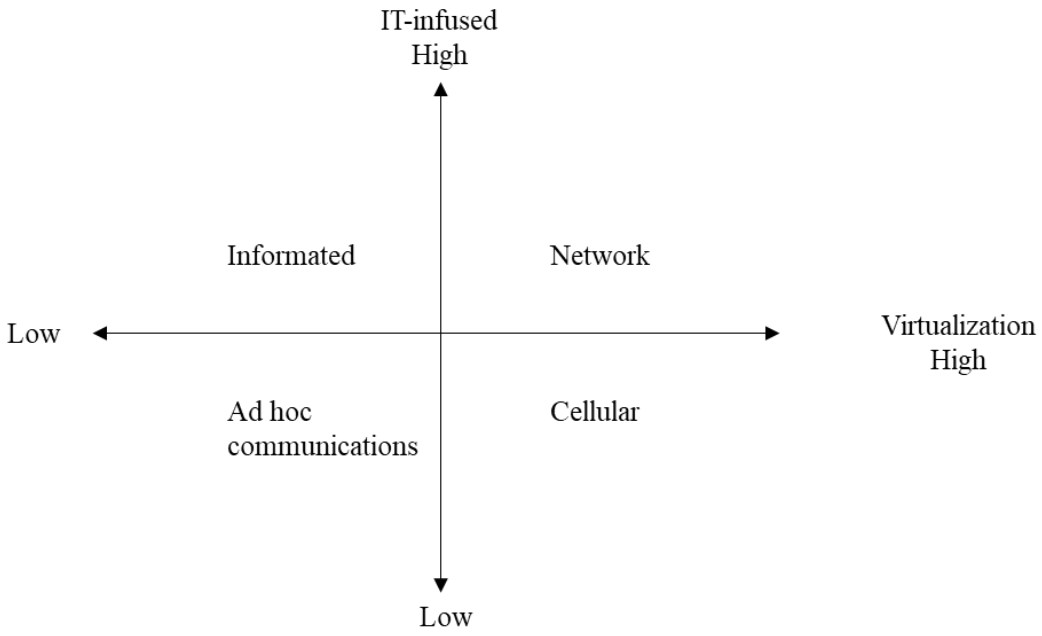

Figure 20. Structures for Managing Knowledge Exchange. Source: Burton et al. (2006, p. 93).

There are two mechanisms that determine knowledge exchanges, virtualization and information technology. "Virtualization refers to the degree of boundary-spanning or organizational reach that a company uses as the basis for knowledge exchange" (Burton et al., 2006, p. 92). An organization that looks external to its boundary to determine knowledge possesses a high level of virtualization. The MEF CE is best described by looking outward to obtain knowledge. "IT Infusion refers to the extent to which a firm relies on information technology-based systems, including data processing and computer-based communications systems, to manage knowledge exchange" (Burton et al., 2006, p. 93). The MEF CE utilizes IT tools heavily for internal and external communications mechanisms, knowledge display (PowerPoint briefings), and shared understanding utilizing multiple computer-based systems to form a common operating picture (COP). Use of a COP will only increase under the new MAGTF IEO COE by developing and utilizing a running estimate (or COP) of the IE. These factors place the MEF CE in the network knowledge exchange space. The network knowledge exchange space categorization is a misfit, as ORGCON recommends either ad hoc communications or cellular, both of which possess only a 20% certainty factor. I argue neither are correct, as

they require a low level of IT-infusion. I further recommend the MEF accepts the risk associated with the network design choice as it matches the goals of an emphasis on both efficiency and effectiveness (Burton et al., 2006).

c. Incentives Misfit

The organizational design factor, incentives, is listed as a misfit with a mismatch between the current incentive and the recommended incentive structure. Unfortunately, there is no listing provided by the output of the ORGCON program for the current incentive structure. Based upon the survey of Marines conducted for this thesis, my input for the ORGCON question regarding incentive structure stated that incentives are based upon group results.

The recommended setting from the ORGCON output report for incentive structure had a nearly identical certainty factor of 75% and 73% for group results and individual results respectively. From this recommendation, it is clear that incentives are guided by results as opposed to behavior, which makes sense given a military organization as the focus of analysis. Behavior alone is not enough to warrant an incentive in the Marine Corps as the Marine Corps is a results-oriented business. However, the ORGCON results demonstrate that both individual and group- based results are important at the MEF CE. I argue that the two are not mutually exclusive. Individuals can be recognized for their performance through evaluations on their individual fitness reports and individual awards. Yet, the group's performance determines how well the organization performs as a whole and whether the MEF CE meets its objectives. Therefore, leaders must also take into account the performance of the group when determining individual awards and evaluations.

d. Complexity Misfit

According to the output report for ORGCON, organizational complexity could either be high or low in the MEF CE, depending on other organizational design factors. Each is as likely to produce optimal results as the other given their certainty factor (81% and 74% certainty factors respectively). At the same time, ORGCON has determined that both horizontal and vertical differentiation should be low. This is an indicator that overall

complexity should be low. This is a misfit with the current level of complexity at the MEF CE, which is currently medium.

Upon further analysis, I do not believe a low complexity to be a viable result for the MEF CE for a multitude of reasons, but mainly because the organization is so large and it contains so many different types of specialties. Matching the MEF CE's goals with its complexity level lead to a high level of complexity where both horizontal and vertical differentiation are high.

> This means that the organization's work is broken down into many task specialties as well as many vertical reporting levels. Horizontally breaking down tasks into smaller tasks means that work can be done simultaneously in the horizontal subunits. Parallel processing of work, ability of each to deal with customers or others in the market place, and the opportunity to work independently all help to facilitate organizational effectiveness. (Burton et al., 2006, p. 72)

Furthermore, once group climate is eliminated as strategic misfit, the mandate by ORGCON to have a low level of complexity decreases. However, high complexity is also a misfit with the current MEF CE complexity assessed at medium. The MEF CE can increase its current complexity level assuming that its information system is rich enough to accommodate the increased information-processing requirements that the increased coordination will require of a high complexity organization.

e. Centralization Misfit

The ORGCON output report displays a misfit between current and recommended level of centralization in the MEF CE. Currently, centralization in the MEF CE is medium. ORGCON recommends that the centralization level should be set to high. However, this recommendation is in large part due to the strategic misfit, group climate. Once the group climate is changed to a developmental climate, the organizational misfit lists a medium level of centralization, which works just as well as a high level of centralization. While I understand the purpose of the high level of centralization given the uncertainty and need to quickly adjust in the complex and uncertain environment, I recommend rejecting the high level of centralization at a MEF CE because of its need for a high level of complexity. A medium level of centralization also allows the organization to decentralize the majority

of its work yet maintain the flexibility to adjust quickly to higher level management (higher level of centralization) when a quick change or adjustment is required due to hostile enemy actions or a rapidly changing environment.

f. Formalization Misfit

The current MEF CE formalization level is medium, while ORGCON recommends that formalization is set to low. The purpose of a low level of formalization is to allow the organization to operate in a more unconstrained manner from written rules so that it can adapt more quickly to its environment. Some recommendations for obtaining a lower level of formalization by ORGCON are to "consider decreasing the number of positions for which job descriptions are available, consider allowing employees more latitude from standards, and consider having fewer rules and procedures put in writing" (EcoMerc, 2015). While these suggestions will work in the ORGCON database, and perhaps in some businesses, they would be very difficult to incorporate into any military organization that regularly rotates its personnel. Instead, a higher level of formalization is required than most organizations would prefer to bring those moving personnel up to speed quickly and ensure all parts of the organization are operating in accordance with a similar understanding. This higher level of formalization sacrifices the MEF CE's ability to foster out-of-box thinking and creativity in the face of a demanding and unpredictable environment. However, I argue a medium level of formalization is required and the MEF CE should knowingly accept this misfit given its personnel's rotational nature. That medium level of formalization should not get in the way of educating leaders to make judgment decisions in the face of uncertainty at the MEF CE.

g. Information Systems Structure Misfit

The current information system setting for the MEF CE is relationship-driven, which is derived from the high categorizations of the amount of information and the tacit nature of the information at the MEF CE. The current relationship-driven information system is a misfit with ORGCON's recommended information system setting of either event-driven or people-driven (both only a 20% certainty factor). However, the decisions to support both of these information systems in the ORGCON output report, at least in part,

stem from the presence of the group climate strategic misfit. Once that strategic misfit is eliminated, the relationship-driven information system that is currently operating at the MEF ties as the highest recommended setting for an information system (36% certainty factor). I recommend no organizational change to accommodate this misfit.

E. ORGCON ANALYSIS CONCLUSION

Chapter V details the ORGCON analysis of the MEF CE by conducting an analysis of the inputs; reviewing ORGCON's assessment of the current strategic and design factors; and reviewing the misfits provided by the MEF CE scenario output in ORGCON. Further, I provided an analysis of those ORGCON misfits based upon Marine Corps and MEF experience and knowledge of their doctrine and procedures, survey results, and organizational design theory. A summary of the results and recommendations from the ORGCON analysis are listed in Table 21. Chapter VI provides a second analysis of the MEF CE's organizational fitness using the Star Model.

Table 21. Summary of ORGCON Analysis Results

ORGCON's Misift Category	Misfit Organizational Factors	Recommended Change	Explanation
2 Strategic / 1 Contingency (3 Total Misfits)	1) Group Climate vs Unpredictable Environment 2) Group Climate vs Analyzer with Innovation Strategy 3) Group Climate vs Relationship-Driven Knowledge Exchange	Change Group Climate to a Developmental Climate	Increase the readiness to accept internal change in the organization
Strategic	Low Level of Education and Training vs Routine Technology	Increase the Level of Education and Training	1.) Increase reutilization tours of OIE personnel 2.) Create a professionalized OIE MOS structure
Contingency	International Geographic Distribution vs Leader Style	Change International Geographic Distribution to Transnational Geographic Distribution	Increase the level of local responsiveness at distributed sites, particularly in the IE
Design	Incentives	Include individual results in addition to group based results in the MEF CE incentive structure	1.) Precepting boards for OIE personnel to increase promotion and Command selection rates 2) Create a professionalized OIE MOS structure to increase promotion and Command selection rates
Design	Complexity	None, Keep Medium	ORGCON recommends low. However, medium to high complexity is a benefit if the organization's IT infrastructure can support it. No change required.
Design	Centralization	None, Keep Medium	ORGCON recommends high. However, centralization should remain medium to low to capitalize on speed. The organization must also be capable of responding to an increase in centralization from leadership while it adjusts to an unpredicatble environment. MEF CE must remain flexible.
Desing	Formalization	None, Keep Medium	ORGCON recommends low. However, the expert system cannot take into account the rotational nature of the personnel in the MEF CE. No change required.

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VI. STAR MODEL ANALYSIS

Chapter VI provides a second analysis of the Marine Expeditionary Force Command Element's (MEF CE) organizational fitness using the Star Model produced by Jay Galbraith. The Star Model, first introduced in Chapter II and reproduced in Figure 21, contains design policies grouped in five different categories: strategy, structure, processes, rewards, and people.

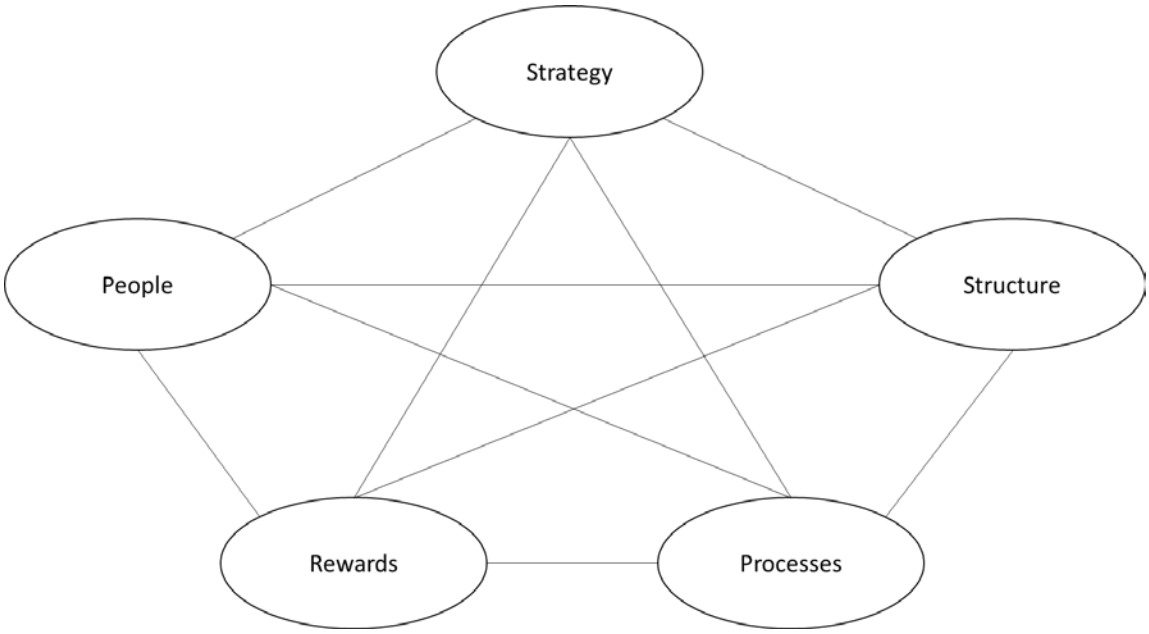

Figure 21. The Star Model. Source: Galbraith (2002, p. 10).

The Marine Air Ground Task Force Information Environment Operations Concept of Employment (MAGTF IEO COE), published in July 2017, provided a direction (strategy) and a partially new structure for the MEF CE to operate successfully in the information environment by 2025. However, it did not address the other elements of the Star Model: processes, rewards, or people. This omission from the concept, whether purposeful or not, has led the Marine Corps and its personnel in many different directions.

This chapter addresses that gap by helping to populate all five categories so that the reader can view the entirety of the MEF CE reorganization, which supplements the MAGTF IEO COE. To assist with this endeavor, I conducted both a survey and semi-structured interviews (described in detail in Chapter IV) with personnel from DC I, MCIOC, IWID, I MEF CE, II MEF CE and the Naval Postgraduate School. The information gained from these measures, combined with current Marine Corps and MEF doctrine and techniques, help to fill in the blanks that exist in all five categories of design policy within the Star Model. Chapter VI details this Star Model analysis, which leads to the identification of problem areas that exist after the MEF CE's reorganization, as well as possible courses of action the Marine Corps and the MEF CE can take to address those issues.

A. STRATEGY

Strategy is the foundational design category of the Star Model. "Strategy is the [organization's] formula for winning. The [organization's] strategy specifies the goals and objectives to be achieved as well as the values and mission to be pursued…It also specifies sources of competitive advantage" (Galbraith, 2009, p. 13). This section analyzes the MEF CE's strategy through examining doctrine and interviews and surveys of Marine Corps personnel.

1. Doctrine and MEF CE Strategy

Chapter II, Sections B and C, detail the Marine Corps' strategy in the information environment. I found strategy statements in documents such as *EF 21* and the *MOC* where it states that "[t]he 21st century MAGTF executes maneuver warfare through a combined arms approach that embraces *information warfare as indispensable* for achieving complementary effects across five domains – air, land, sea, space, and cyberspace" (USMC, 2016c, p.8). Marine Corps and MEF strategy in the information environment are further described in the MAGTF IEO COE by integrating four central ideas: 1) planning and executing IE operations along functional lines of effort, 2) establishing a dedicated IE operations organization, the MEF Information Group (MIG), charged with integrating IE operations along functional lines of effort, 3) building agile and distributed command and

control capabilities, and 4) developing a near-real time running estimate to feed the common operational picture" (USMC, 2017c). Finally, the newly appointed Deputy Commandant for Information describes the Marine Corps' strategy for operations in the IE in his Draft Campaign Plan. The purpose is defined as "enabling the Marine Corps to win in any information-contested environment. [The end goal is to] create asymmetric, competitive advantages against a peer threat across all phases of a naval and joint campaign (including Phases 0 and I operations) by increasing: MAGTF lethality, survivability, decision making, tempo, and influence" (O'Donohue, 2018, p. 13).

2. Strategy Implications from Semi-structured Interviews

There were no questions from the semi-structured interview process that asked specifically about Marine Corps or MEF strategies. However, I observed several themes from the interview process centered specifically around the strategy category.

a. Tempo in Decision Making

Tempo was the most common theme addressed by the interview population related to strategy. It was clear to me that in the minds of the majority of those interviewed, the MIG was created specifically to generate tempo for the MAGTF in the information environment relative to the enemy's decision-making process. This tempo manifests itself by driving the MEF OODA Loop (Chapter III) to spin faster relative to the enemy's OODA Loop due to the MEF CE's future asymmetric advantage in the information environment. This same philosophy is shared between the interview population, the MOC, the MAGTF IEO COE, and the DC I's Draft Campaign Plan.

b. Combined Arms Approach

The second most prevalent strategic theme was that operations in the information environment (OIE) are additive to the MEF's combined arms approach. The majority of interviews expressed a need to integrate OIE into the remainder of operations at the MEF, thus allowing the combined effects of all operations to increase the advantage of the MAGTF relative to the enemy. Therefore, OIE are simply an extension of the Marine

Corps' already existing maneuver warfare philosophy and combined arms approach. This statement is also heavily rooted in Marine Corps doctrine and concept materials.

c. Information Is a MAGTF "Fire"

A third strategic idea is that information effects are a part of the fires process, to be coordinated in a combined arms manner. The majority of participants expressed this throughout the interviews, but it was most prevalent among those currently serving at a MEF CE. Viewing information as a MAGTF fire helps determines where the responsibility and coordination of OIE belongs at the MEF CE.

d. Change Is Required

The final strategic idea agreed to by all parties is that some element of change was necessary at the MEF CE level to adjust to the future operating environment. I asked several questions along these lines to include inquiries regarding concerns with the MIG, the function of the MIG, and what the interview subjects would recommend to address the future operating environment if they had the ability to start over prior to the MIG decision. Although I received answers that spanned many different directions, not one interview respondent expressed the desire to keep the organization the same to cope with the future operating environment. In fact, most respondents suggested some sort of change regarding the manner in which the MEF CE plans and executes OIE specifically.

e. Function of the MIG

One of the largest disputes among interviewees concerned the function of the MIG. Grouped responses included:

- Synchronize, integrate, coordinate, and execute functions of OIE
- Increase MAGTF tempo in the IE
- Conduct phase 0 and 1 operations (24/7) in conjunction with MARFORs
- Absolutely no phase 0 or 1 operations
- Establish targeting objectives in the IE on behalf of the MEF CG

- Unity of command/effort of information as a warfighting function
- Oversee the execution of all tasks in the IE
- Plan and execute MAGTF IE Ops
- The MIG is more of an executor than a planner
- Combined arms integration of the 6 functional capability areas (listed in Chapter II, Figure 14)

While there was agreement that change is required to face the future operating environment, interview participants seemed unclear as to what the MIG will do to enact that change. Although the phase 0 discussion is not included in the MAGTF IEO COE, it is present in the DC I's Draft Campaign Plan. Since the mission and purpose of the MIG is not yet clearly defined and in balance with all design categories of the MEF CE organization, a clean definition of these matters will help clarify the proper organization of the MEF CE in the future.

3. Strategy Implications from the Survey

There were no questions specifically geared toward strategy on the Marine Corps survey other than two ORGCON questions about efficiency and effectiveness. Both effectiveness and efficiency were identified as goals of the MEF CE; however, effectiveness is the governing goal.

B. STRUCTURE

Structure should logically flow from strategy. "The structure of the organization determines the placement of power and authority in the organization. Structure policies can fall into four areas: specialization, shape, distribution of power, and departmentalization" (Galbraith, 2009, p. 14). Specialization refers to how many and what kind of specialists there are in an organization. Shape refers to the size of each department and its ability to provide influence throughout the organization. Galbraith (2009) also states that distribution of power can be broken into two components: horizontal and vertical. The vertical

component denotes level of centralization while the horizontal component refers "to the movement of power to the department dealing directly with the issues critical to its mission" (Galbraith, 2009, p. 15). Departmentalization involves the formation of different subdivisions at different tiers of the overall structure. Departments can be formed for many reasons to include: functions, processes, customers, or geography (Galbraith, 2009).

1. Doctrine and MEF CE Structure

Chapter II, Sections A2 and C, of this thesis detail the structure of the MEF CE. The 2017 reorganization of the MEF CE was mainly structural. The *MAGTF IEO COE* (USMC, 2017c) laid out the foundation for this change but the change was formally directed in 2017 by the release of a MCBUL 5400, which redesignated the Marine Corps' three MHGs as MIGs (USMC, 2017e). The MCBUL also directed the MIG subordinate structure to exist as follows: 1) MIG Headquarters, 2) Air Naval Gunfire Liaison Company (ANGLICO), 3) Communication Battalion, 4) Intelligence Battalion, 5) Law Enforcement Battalion, 6) MEF Support Battalion, 7) Public Affairs/Combat Camera Company, and 8) Radio Battalion. Only the MIG Headquarters, MEF Support Battalion, and Public Affairs/Combat Camera Company were new subordinate structure for the MIG. The intent of the MEF Support Battalion was to take over most of the administrative and logistics tasks from the MIG, which allows the MIG to focus primarily on its information warfare mission (USMC, 2017a). Additional structure will be added to the MIG in the coming years as part of the Marine Corps' Future Force 2025 plan to include: an Electronic Warfare Support Company under the Radio Battalion, a Defense Cyberspace Operations–Internal Defense Measures (DCO-IDM) Company under the Communications Battalion, and a Military Information Support Operations (MISO) Company (O'Donohue, 2018).

Although the subordinate structure is explicit, the responsibilities of the structure and how power is distributed within the MEF CE are less clear. *MCRP 1–10.1*, published in February 2018, formally introduced the MIG in Marine Corps doctrine and directed its mission to "coordinate, integrate, and employ information warfare capabilities in order to ensure the MAGTF commander's ability to facilitate friendly forces maneuver and to deny the enemy freedom of action in the information environment" (USMC, 2018, p. 4-1). Also,

the first real designation regarding distribution of power was published in the document by designating that “operational command of these subordinate battalions is retained by the MEF CG, as exercised through the MEF CE staff” (USMC, 2018, p. 4-2). Figure 22 further states that MIG subordinate units fall under the administrative control (ADCON) of the MIG Commanding Officer while the MEF CG would maintain operational control (OPCON) of the units.

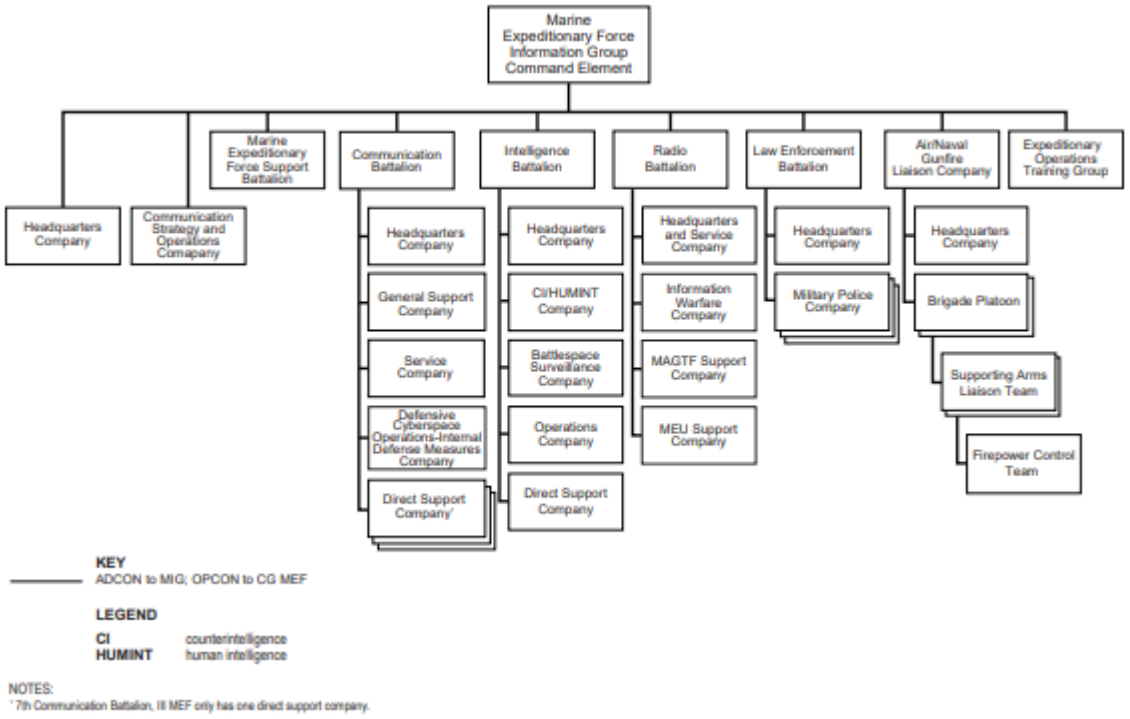

Figure 22. MIG Structure. Source: USMC (2018, p. 4-2).

MCRP 1–10.1 clearly places the distribution of power with the MEF CE staff sections as opposed to the MIG. However, the language contained in MCRP 1–10.1 directly conflicts with the MAGTF IEO COE stating that “[t]he MIG commander is the MEF commanding general’s primary subordinate commander delegated the authority to plan, execute, and/or coordinate integrated IE Ops across the MEF’s AOI” (USMC, 2017c, p. 4). The COE is also clear in its language to ensure all subordinate MIG units will be tasked directly by the MIG CO and not directly by MEF Staff sections. Further,

MCWP 3–40.1, MAGTF Command and Control, states that ADCON and OPCON relationships do not exist between elements of the MAGTF. Instead, elements of the MAGTF use Command and supporting/supported relationships (USMC, 2005). The amalgamation of these conflicting documents serves to create confusion among Marines regarding one of the fundamental responsibilities of a military agency: command relationships. Command relationships are also a fundamental element in organizational design theory known as distribution of power, and a full structure does not exist without a clear distribution of power. Figure 23 shows the MEF CE structure as it exists on MEF CE tables of organization.

To truly grasp the full measure of the problem, the reader must understand how the MEF CE adjusts its structure when deployed. When deployed, the MEF staff sections typically organize into a network of warfighting operations centers, each responsible for a warfighting function, which all report to the MEF Combat Operations Center (COC). These centers exist simultaneously with the MEF CE's staff functions. The MEF COC serves as the CG's primary command and control (C2) facility. Within this facility, the staff coordinates and synchronizes actions across warfighting functions, planning horizons, and domains to facilitate the CG's decision-making process. Command is an authority, frequently executed in the form of decisions; however, control is a feedback mechanism that relies on communications, information systems, and networks to convey data, which subsequently builds toward knowledge (USMC, 1996). This feedback mechanism includes input from an array of sources such as intelligence collection assets, subordinate commands, and a variety of other sensors. The feedback mechanism also includes output consisting of directives and guidance from the MEF COC that link back to organizations and assets to generate operational tempo. The CG organizes the COC to ensure unity of effort, generally aligned under warfighting functions, and to mitigate span of control concerns. Specifically, centers and cells are employed to focus on specific functions relevant to the sustainment of operations (I Marine Expeditionary Force [MEF] G-6, 2018). Each of these centers/cells falls under the cognizance of a primary staff directorate.

> Cells and centers operate across the planning horizon; monitoring current operations, planning future actions and promulgating guidance/direction to subordinate organizations to sustain the MAGTF's operational momentum. These centers and cells also serve as primary "control" nodes – receiving input to understand the current situation and providing output to sustain or modify actions within the assigned warfighting function, domain or planning horizon. Additionally, they serve as the central point for external coordination with adjacent and higher organizations (unless DIRLAUTH has been granted). They often are led by the primary staff officer on the CG's staff and are manned by personnel from the lead staff directorate. (I MEF G-6, 2018, p. 3)

Figure 24 displays the operations centers and cells, who is functionally responsible, and what units from the MIG fall in support. From Figures 24 and 25, it is clear that the MEF CE organizes under a matrix structure, with multiple units reporting to multiple entities and levels of command. Without clear processes, the matrix can be difficult to manage successfully.

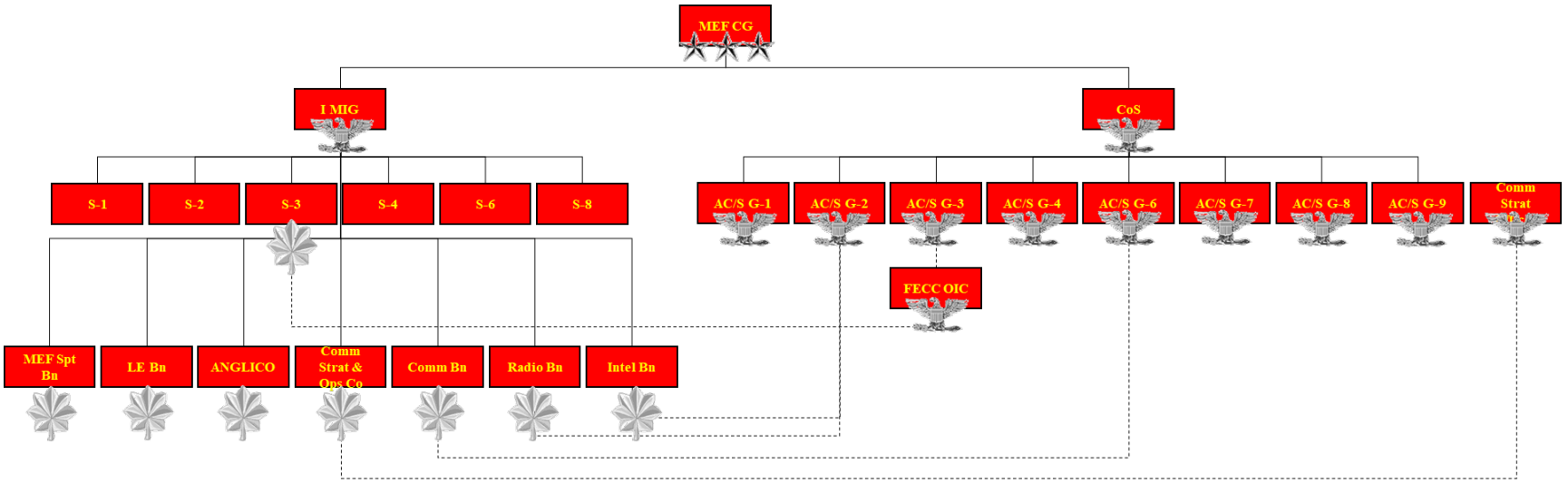

Figure 23. MEF CE Structure

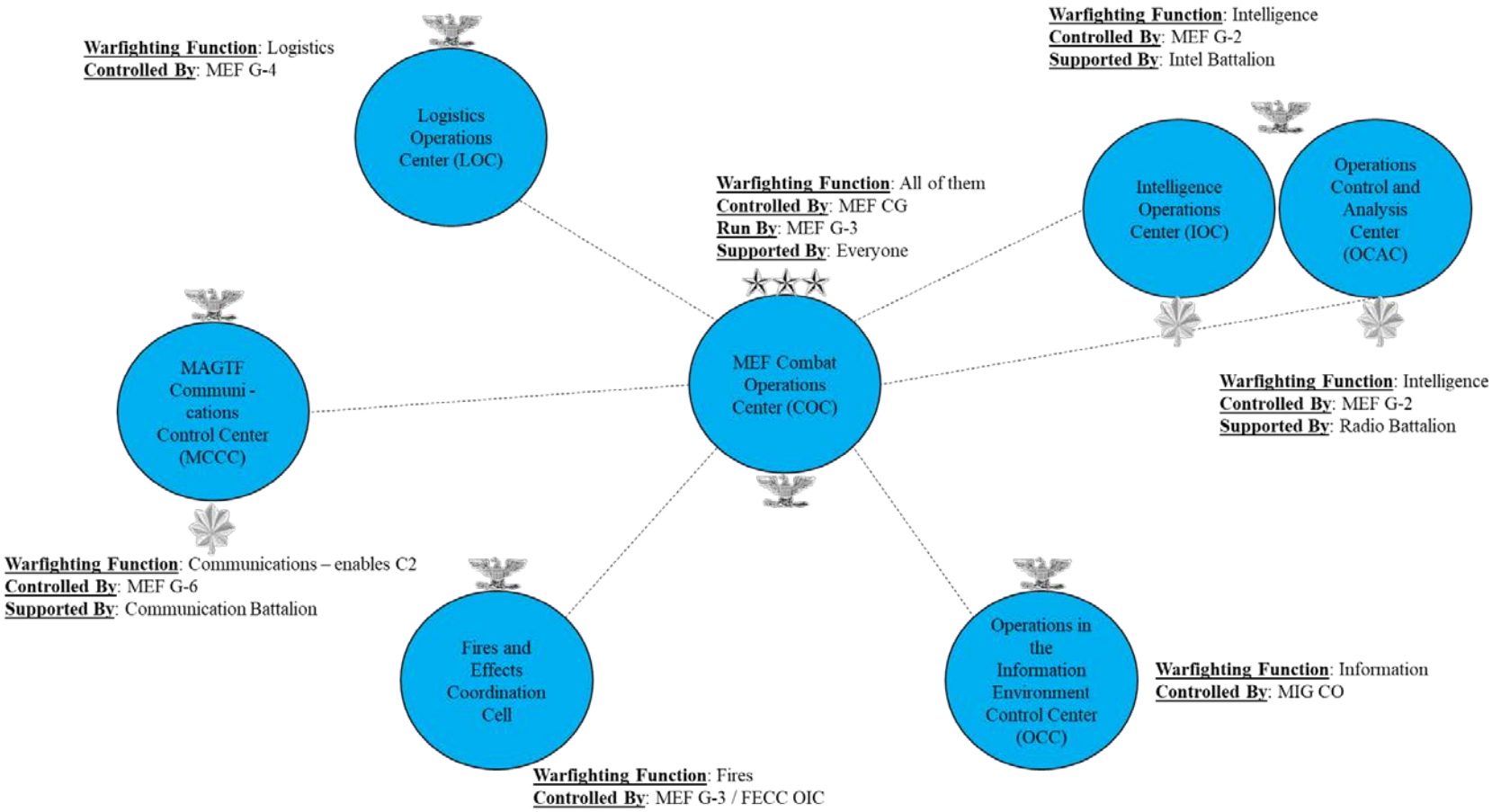

Figure 24. MEF Warfighting Centers and Cells

The DC I, created in July of 2017, can serve as a deconfliction mechanism that has the authority to suggest clear doctrine regarding the distribution of power of the MEF CE as it pertains to OIE, the MEF CE staff, and the MIG. To gain insight into the DC I's intent, I reviewed the Draft Campaign Plan put out by the office of the DC I in April 2018. Although still a draft, and neither a concept nor doctrine, it does illuminate the vision and direction of the lead agency tasked with OIE by the Commandant of the Marine Corps. The DC I's Draft Campaign Plan does not specifically address the power structure of the MEF CE. However, the plan does offer insight into the shared responsibilities of the subordinate elements of the MIG to both the MIG CO for OIE, as well as their responsibilities to the MEF CE staff sections (O'Donohue, 2018). While the power distribution problem is not solved, this dual relationship further highlights the matrix structure of the MEF CE.

Another inconsistency exists in the structure of the MEF CE. The MIG is tasked in multiple documents as the primary planner and executor of OIE. However, many of the functions in OIE, defined by the MAGTF IOE COE, are already executed by the MEF CE staff sections. For example, function 2 for OIE tasks the MIG with providing IE battlespace awareness (USMC, 2017c). This function is typically an intelligence function, and thus the G-2 has traditionally provided oversight. Doctrine does not delineate, nor even suggest, where the responsibility for this function starts and stops for either of these organizations. Figure 25 depicts the seven functions of OIE, who is traditionally responsible for those functions, and who is responsible due to the MAGTF IEO COE.

	Functions of OIE	Agency Previously Responsible	Agency Now Responsible
1	Assure Enterprise C2 & Critical Systems	MEF G-6	MIG, MEF G-6, Comm Bn
2	Provide IE Battlespace Awareness	MEF G-2	MIG, MEF G-2
3	Attack & Exploit Networks, Systems, & Information	MEF G-3	MIG, MEF G-3, MEF G-6, Comm Bn, Rad Bn
4	Inform Domestic & International Audiences	MEF Comm Strat Officer	MIG, Comm Strat Officer, CS&O Co
5	Influence Foreign Target Audiences	MEF G-3, FECC	MIG, MEF G-3, FECC
6	Deceive Foreign Target Audiences	MEF G-3, FECC	MIG, MEF G-3, FECC
7	Control IW Capabilities, Resources, & Activities	Stove-piped	MIG

Figure 25. Responsibility for Functions of OIE. Adapted from USMC (2017c, p. 2).

Primary responsibility for organizational functions are part of the overall structure of an organization, again due to the need to clearly delineate the distribution of power. To fully define the MEF CE reorganization, distribution of power must be addressed by the Marine Corps and MEF CE leadership.

2. Structure Implications from Semi-structured Interviews

Several questions from the semi-structured interview process specifically targeted MEF CE structure. From the answers to those questions, I observed several areas of confusion regarding the current MEF CE structure. I've included the top areas of confusion in Section 2.

a. Planning Operations in the Information Environment

When asking the interview population who in the MEF CE they believed to be in charge of planning OIE, I received a variety of answers, even from those sharing the same Command. The large difference in responses to this question tells me that the Marine Corps organization as a whole is confused regarding organizational responsibility. To assist in

future war-gaming for responsibility assignment I list the answers that received multiple responses: the MEF CG, the MEF G-3/G-5, the FECC, the MEF staff, and the MIG. I eliminated MEF CG because he/she is responsible for everything. The CG will delegate this responsibility to the staff or another Commander and his/her staff. Picking a particular staff section is not useful because OIE spans so many different functions. Therefore, the choice for planning OIE is narrowed to either the MEF CE staff or the MIG.

b. Responsibility for the 7 Functions of OIE

Responsibility for the seven functions of OIE was another area of confusion with many responses and directions. While the majority of respondents agreed that the DC I, with assistance in certain areas from DC CD&I and DC PP&O was the Service-level advocate for OIE, they could not agree at the MEF-level between the MIG holding the responsibility or the MEF CE staff holding the responsibility.

c. Planning Responsibilities

Judging by the answers from the interview participants, it is unclear whether the MIG exists to plan, execute, or both plan and execute the responsibilities of OIE. Although the mission in the COE, MCRP 1–10.1, and the DC I's Draft Campaign Plan include the following definition: "[t]he MIG will plan, coordinate, integrate, and employ OIE capabilities to enable the MAGTF commander to facilitate friendly-forces maneuver and deny the enemy freedom of action in the IE" (O'Donohue, 2018, p. A-3), confusion exists due to the previously existing functions of organizations within the MEF. The MEF CE staff is traditionally the lead planning organization in the MEF. This causes redundancy in function at the MEF CE. The Marine Corps needs to better define the responsibilities of both the MIG and the MEF CE staff for both planning and execution of OIE in the future. There are two possible COAs related to responsibilities that should be war gamed in accordance with my interviews. The first COA revolves around the MEF CE as the principal planner of OIE, specifically the FECC, while the MIG is the principle executor. Plans, current operations, and future operations require clear delineation, which is the portion of the COA requiring war-gaming. Figure 26, developed by I MEF CE, provides a pictorial representation of the division of responsibilities between the MIG and the MEF CE staff for COA 1.

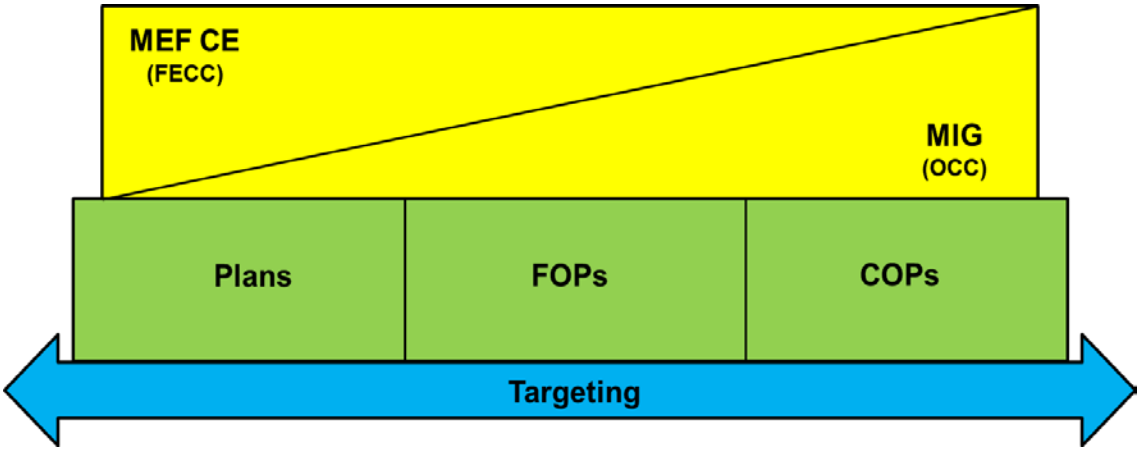

Figure 26. FECC and MIG Division of Labor. Source: Jones (2018, slide 36).

The second COA puts the MIG in the lead for planning and current operations for OIE. While this makes sense given the rank and experience level that will one day exist in the MIG compared to the FECC regarding nonlethal fires, gaps in planning could then potentially exist between OIE and other kinetic operations planned by the rest of the MEF CE staff. In this scenario, the MIG requires complete immersion in MEF CE planning to ensure clearly integrated planning. However, this action would nearly replace the need for a FECC entirely. I argue that COA 1 is more viable, but both merit future consideration.

C. PROCESSES

While the MAGTF IEO COE and other supporting documents provided direction regarding changes to strategy and structure, that is not the case regarding processes. "Information and decision processes cut across the organization's structure; if structure is thought of as the anatomy of the organization, processes are its physiology or functioning. Management processes are both vertical and horizontal" (Galbraith, 2009, p. 15). Vertical processes allocate the resources of the organization such as assets, funds, and skills. Organizational planning and budgeting processes are examples of vertical processes. For a military organization, choosing what level of rank to chair a process and how much money should be allocated to that project are examples of vertical processes. Horizontal processes are designed around the workflow and are either voluntary, ad hoc, or more formally established. For example, a cross-functional team is a formally established horizontal

process. A military example of a horizontal process is a daily or weekly meeting to deconflict priorities for targeting. While both vertical and horizontal processes are important, the Commander's short-range decision-making process in combat operations is where I focus in this section.

1. Doctrine and MEF CE Processes

The main decision-making process used by the MEF CE in combat is the Daily Battle Rhythm. The Daily Battle Rhythm is a complex process aimed at synchronizing the current and future operations efforts across warfighting functions. The Daily Battle Rhythm is a significant component of how the MEF CE gains awareness of the operating environment and makes plans to influence that environment in the MEF area of operations.

The Daily Battle Rhythm consists of an integrated mesh of boards, bureaus, cells, centers, and working groups (B2C2WGs). These meeting points are conducted by cross-functional teams from the various staff sections of the MEF CE, as well as subordinate units and agencies from throughout the MAGTF.

> The B2C2WGs incorporate boards, working groups—and standing cells and centers – in order to share awareness and generate actions that both feed the commanders understanding of the operating environment and decision-making process. It links the "awareness" gained through inputs; inputs gained through standing cells and centers across the key stake holders – and generates outputs in the form of guidance, direction or plans – similarly pushed out from standing cells and centers within the MEF COC. These cells and centers also coordinate with adjacent commands and receive guidance, or request resources from, senior commands aligned with established command relationships. (I MEF G-6, 2018, p. 6)

The Commanding General participates in the B2C2WGs as he/she sees fit but is generally tied in at four points throughout the Daily Battle Rhythm: the Commander's Update Brief (CUB), the Plans and Assessments Board, the Targeting and Collections Board, and the Commander's Huddle. Figure 27 details the B2C2WGs from the I MEF TACSOP, which is an example of one way the B2C2WGs could be organized.

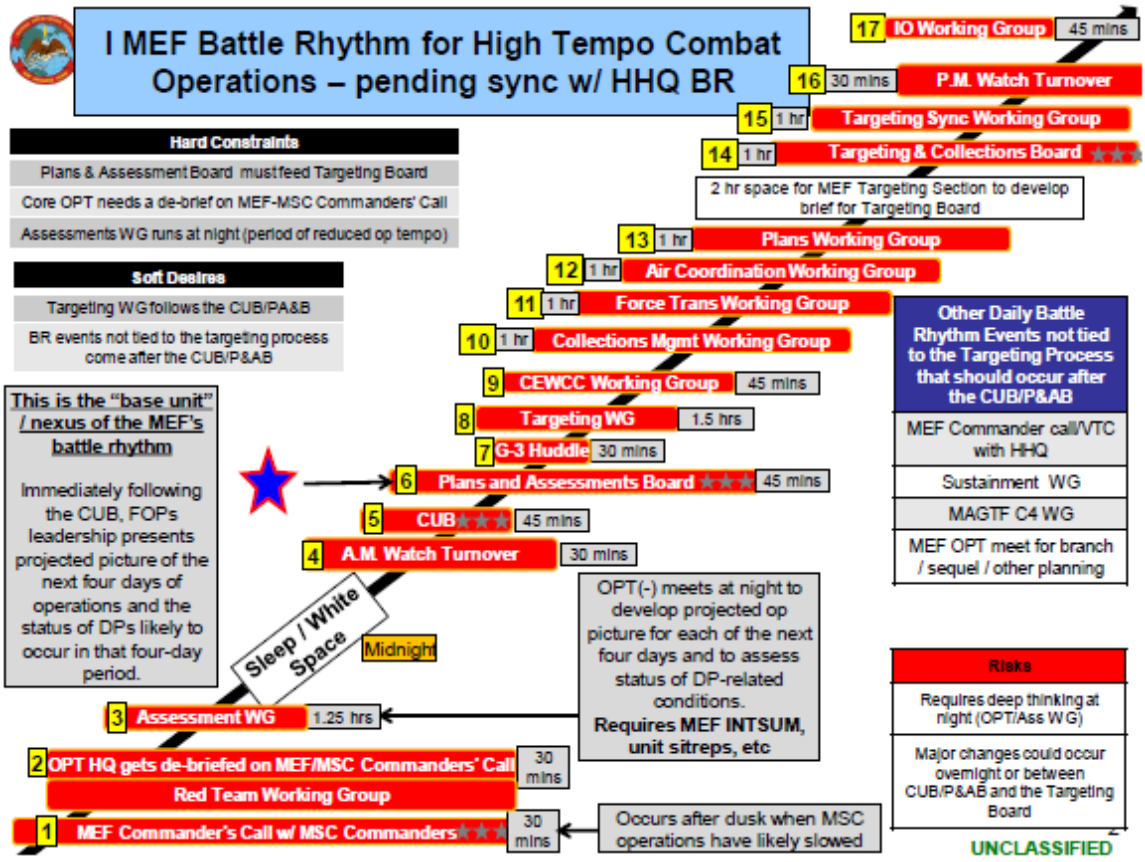

Figure 27. I MEF Battle Rhythm Example. Source: I MEF (2016, p. 23).

The process can change and does change frequently; however, the nature of the working groups and cells feeding a board for the Commander to make a decision does not change. Figure 28 provides a timeline from the beginning to the end of a work day, with the CG's meetings colored in green.

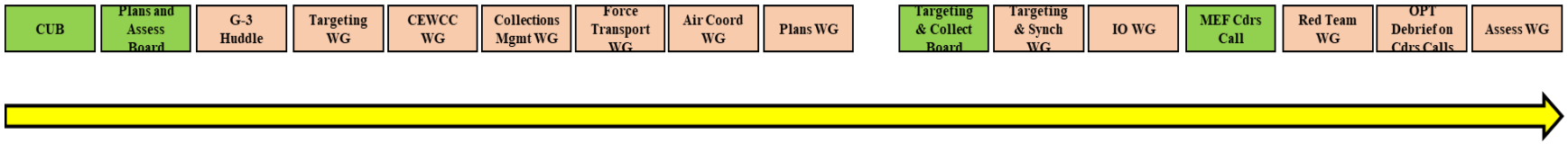

Figure 28. CG in the Battle Rhythm

While the Battle Rhythm is codified in MEF SOP, it has not been adapted to incorporate the MIG and its responsibility to execute/supervise the seven functions of OIE. Part of the reason for the lack of integration of the MIG is the shortcoming in responsibility assignment from the structure design category. However, possible methods to incorporate the MIG were developed during the semi-structured interview process.

2. Process Implications from Semi-structured Interviews

The semi-structured interview process included many questions that targeted MEF-level processes and provided the most areas for improvements within the Star Model assessment.

a. B2C2WGs

I found a consensus view of the B2C2WGs as the primary integration process for any type of MEF-level operation including OIE. The various B2C2WGs are listed in Figures 28 and 29 but can be adapted to a different Commander or staff. Each MEF places more importance on coordinating the various warfighting functions rather than staying true to a particular working group or series of working groups.

I found through the interviews that most working groups occur daily and feed into a higher working group and then ultimately a board. Some working groups occur on-call or meet at less frequent times. The majority of the OIE working groups are centered around the targeting cycle (Chapter III): detect, decide, deliver, and assess. The targeting cycle is paced by the air tasking order, and thus consists of a 96-hour cycle, meaning targets are deliberately allocated and resourced 96 hours in advance and approved 72 hours in advance. While not all OIE follow this cycle, they fit the targeting process better than any other previously existing process.

b. MEF Representation for OIE

The Fires and Effects Coordination Cell, falling under the MEF G-3, has traditionally planned OIE, and that planning is led by the Technical Information Operations (TIO) Officer and integrated into the total fires effort by the FECC OIC. However, OIE

consists of many different disciplines and have traditionally required a whole of staff effort to plan and integrate. The key players at the MEF CE are the G-2, G-3, G-3 FECC, G-4, G-5, G-6, G-9, Comm Strat Officer, the MHG/MIG, the Radio Battalion, the Communication Battalion, and the Intelligence Battalion. These entities have traditionally planned as a group under the supervision of the FECC.

c. B2C2WGs Leads

Interview answers were split regarding who should lead the B2C2WGs for OIE once the MIG is fully operations capable (FOC). To understand who should lead the B2C2WGs, I will first illustrate the current configuration of OIE B2C2WGs at I MEF as they were executed during the MEFEX from February through March 2018. Three working groups worked as feeders into one synchronized working group spanning OIE: the EMSO working group where cyber operations, electromagnetic spectrum operations (EMS), and space operations were planned; the MILDEC working group; and the inform and influence working group (see Figure 29). These three groups were chaired by the junior TIO officer at the FECC, the MEF G-5, and the Comm Strat section respectively. All three working groups fed the Information Environment Operations (IEO) working group where all OIE were deconflicted and synchronized. This working group was led by the senior TIO officer in the FECC. The IEO working group fed the Targeting working group where non-lethal and lethal fires were deconflicted and synchronized. The Targeting working group was led by the FECC OIC. The Targeting working group fed the Targeting and Collections Board, which was chaired by the MEF CG. The Targeting and Collections Board serves to approve the Target Nomination List (TNL), the IO CONOP, and the synchronization of non-lethal and lethal fires. The Board also serves as the vehicle to provide future targeting priorities and guidance from the Commanding General for the development of future operations.

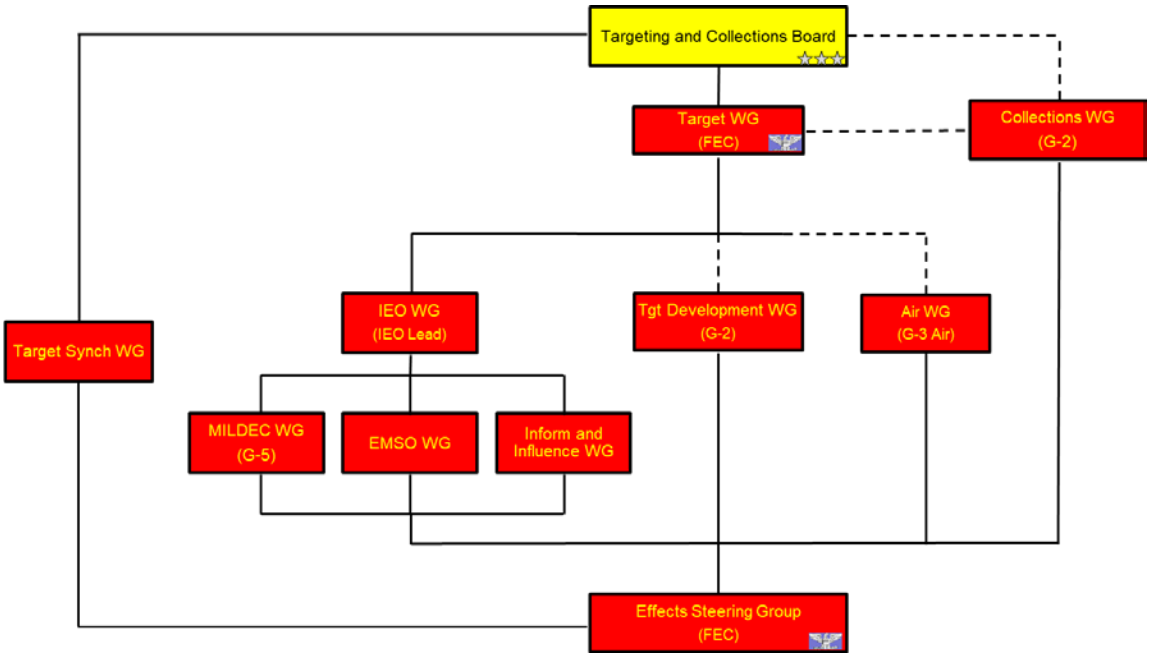

Figure 29. I MEF OIE and Targeting Process. Source: Jones (2018, slide 10).

Regarding who should chair these working groups in the future, three interview answers rose above the rest: no change, a distinction between planning and execution of the operations (MEF staff plans and the MIG executes), and the MIG will take over the IEO working group and its feeder working groups as part of the planning mission regarding OIE. The direction chosen by the Marine Corps and the MEF CE should be based upon the clarification of the MIG's function addressed in the structure section.

d. MIG / MEF CE Overlap

One interview question asked the interview participants where they believed MIG and MEF CE responsibilities and processes would overlap or touch. There were a variety of answers with the most prevalent as: no overlap; the natural overlap that exists between PLANS, FOPS, and COPS; duel answers on the MIGs focus, some believed internal to the MEF, while other believed the focus should be external to the MEF; and the MEF should be focused more on the deep fight and plans while the MIG should focus on current operations. The wide variety of answers demonstrate yet again a lack of understanding for how the MIG should integrate into the MEF CE.

e. Friction Points

Another interview question asked the interview participants where they believed friction would exist between the MIG and the rest of the MEF CE. Friction is a term adapted from *MCDP 1*, which all Marines understand, defined as "the force that resists all action and saps energy. It makes the simple difficult and the difficult seemingly impossible" (USMC, 1997, p. 5). Friction can be caused by internal or external forces. In this case, "friction may be self-induced, caused by such factors as lack of a clearly defined goal, lack of coordination, unclear or complicated plans, complex task organizations or command relationships, or complicated technologies. Whatever form it takes, because war is a human enterprise, friction will always have a psychological as well as a physical impact" (USMC, 1997, p. 6).

The answers to the friction interview question were surprisingly concise, yet complicated. The majority of answers corresponded to the seven functions of OIE, which highlight the natural conflict between the MIG, the MEF CE staff sections, and the MIG Battalions. The solutions to these friction points were to develop clear swim lanes between the various organizations, provide liaisons in planning and execution, personal relationships, and to maintain that natural relationship between the MEF CE staff and the MIG Battalions that support the staff's warfighting function. Section f through k explore the friction along the functions of OIE further.

f. Function 1: Assure Enterprise C2 and Critical Systems

Function 1 for OIE is to assure enterprise C2 and critical systems, which includes "actions to defend networks, systems, and information in order to enable command and control and the assured operation of critical systems" (USMC, 2017, p. 2). As previously stated, this function belonged almost solely to the MEF G-6 because he/she is delegated communications control by the MEF CG. The MEF G-6 utilizes the MCCC (Figure 25) to direct the current operations of the network among all communications agencies in the MEF to include the Communication Battalion. This authority will not be challenged and is not at issue with the creation of the MIG. The friction resides with who directs DCO actions on the network and how are those are deconflicted with the remainder of the OIE.

There are two primary schools of thought that I discovered during interviews. The first is that the G-6 should continue to direct DCO actions internal to the MEF controlled network (regardless of enclave). This means that the G-6 has full control to task the Communication Battalion and its subordinate DCO-IDM Company who is coming on-line as part of the Marine Corps' Future Force 2025 initiative. The MIG would then direct any DCO response actions (DCO-RA), which are defensive actions taken external to the MEF network. The reasoning for COA 1 is that the MEF CE G-6 contains the technical functional communications skills necessary to direct those actions while the MIG does not. Furthermore, no actions should occur on the network without full deconfliction with the entity that owns DODIN operations, which is the MEF G-6. DODIN operations are those operations that encompass planning, installation, operation, maintenance, and defense (basic defense) of DoD computer networks. The second school of thought is that there exists a separation between the control of DODIN operations and DCO operations, and the MEF G-6 and the MIG CO should be in charge of each respectively. The reasoning for COA 2 is that DCO is wholly separate from DODIN operations in the sense that it contributes to OIE explicitly. DCO requires synchronization and deconfliction with all other OIE and other operations where the MEF is involved. That is the MIG's reason for existence, and the MIG will direct its Communication Battalion accordingly from the OCC.

Both COAs possess holes and cause coordination problems, yet they both merit consideration going forward. At the heart of the issue is the function of the MIG, its Command relationship to its subordinate battalions and how it will subsequently coordinate with the MEF CE staff sections. The Marine Corps and MEF CE must clearly delineate swim lanes for Function 1 for OIE. Function 1 is the most conflicted area requiring further scrutiny in future experimentation because the cyber domain continues to grow and the speed of automation continues to increase. Correcting this process at the MEF CE could very well decide if the MEF CE can effectively generate tempo in the information environment relative to their enemy in future conflicts.

g. Function 2: Provide IE Battlespace Awareness

Function 2 for OIE is to provide battlespace awareness, which includes "actions to characterize the physical, informational, and cognitive dimensions of the information environment in order to identify challenges, opportunities, and comparative advantages for the MAGTF" (USMC, 2017c, p. 2). This definition is a function of intelligence, which is specifically targeted at the information environment. Intelligence is a warfighting function typically coordinated and directed by the MEF G-2. To support this endeavor while deployed, the Intelligence Battalion falls underneath the G-2 in the IOC (Figure 25), and the Intelligence Battalion CO becomes the Intelligence Fusion Officer at the MEF CE. The Radio Battalion also provides the OCAC to the MEF G-2 to support processing and production of intelligence. This element operates under the direct guidance of the MEF G-2, not the MIG. Surprisingly, during the interview process, no one suggested changing this relationship. In fact, the majority of the interview participants expressed that the relationships need to continue once the MIG is FOC. However, the following elements emerged as process problems:

- Does the MIG intelligence section provide the OIE annex to the IPB?
- The MIG becomes another collector in the MAGTF. How does it provide the information it collects for the G-2 to analyze in real-time?
- Where does the training coming from to provide IE-focused intelligence (also falls under the people category)?
- Does the MIG maintain the IE COP at the OCC, and does that feed the IOC or vice versa?
- How do the MIG and the G-2 coordinate real-time regarding immediate targeting assessment in the information environment?

This thesis does not attempt to answer these questions. Instead it points out the areas that require future action. War gaming these processes at the MEF CE in subsequent exercises and operations is suggested as a means of defining solutions.

h. Function 3: Attack and Exploit Networks, Systems, and Information

Function 3 for OIE is to attack and exploit networks, systems, and information, which includes "actions in accordance with approved authorities to exploit or attack adversary networks, signatures and information in order to create advantages for the MAGTF" (USMC, 2017c, p. 2). These types of operations were previously planned in the G-3 FECC. However, the Marine Corps currently lacks the capability to execute these types of operations given their current manpower, level of training, and the lack of tactical OCO cyber authorities. However, along with the changes the Marine Corps has already experienced regarding Future Force 2025 and the MIG is the expectation that tactical OCO capabilities will be given to the MEF. Those personnel will exist in the Radio Battalion. However, where these types of operations will be planned and coordinated are up in the air according to the interviews I conducted. The two major beliefs for this future of this function are: 1) The MEF G-3 and FECC will retain the planning responsibility for function 3 and the MIG will monitor execution, and 2) The MIG will be responsible for the planning and execution of function 3. Both COAs assume that OCO authorities will one day reside at the MEF level and if not, the MEF will still have the capability to request OCO effects. The major difference stems from whose responsibility it is to plan OIE, the MIG or the MEF CE staff. This problem stems from the responsibility issue previously addressed during the structure section.

i. Function 4: Inform Domestic and International Audiences

Function 4 for OIE is to inform domestic and international audiences, which includes "actions taken to inform domestic and international audiences in order to build understanding and support for operational and institutional objectives" (USMC, 2017c, p. 2). The communication strategy section, formerly the public affairs section, currently plans inform operations on behalf of the MEF CG by way of the inform and influence working group that is co-chaired by the communications strategy section and the FECC. The question raised in the interviews is who will be responsible for planning these operations once the MIG is FOC.

j. Functions 5 and 6: Influence and Deceive Foreign Target Audiences

Functions 5 and 6 for OIE are to influence and to deceive foreign target audiences respectively. The influence function refers to "actions taken in accordance with approved authorities to influence select foreign audiences and affect their decision-making and behaviors in order to create conditions favorable to operational objectives" (USMC, 2017c, p. 2) while the deceive function includes "actions to induce ambiguity, misunderstanding, resource misallocation, and delayed action in order to mislead adversary decision-makers, reveal their strengths, dispositions, and future intent while protecting MAGTF capability, readiness, posture, and intent" (USMC, 2017c, p. 2). Both functions are currently managed by their respective working groups. The G-5 chairs the MILDEC working group while the inform and influence working group is co-chaired by the FECC and the communications strategy section of the MEF CE. The same planning considerations as previous functions will need to be addressed during future exercises and operations to address whether the MEF CE staff or the MIG will be responsible for planning functions of OIE once it is FOC.

k. Function 7: Control IW Capabilities, Resources, and Activities

Function 7 for OIE is to control IW capabilities, resources, and activities, which include "actions taken to provide the commander with the ability to exercise command and control and integrate assigned Marine, Naval, and Joint information assets and enhance the MAGTF's ability to operate in the information environment" (USMC, 2017c, p. 2). This function is not new, yet no entity was specifically responsible before. The interviews show two schools of thought relating to function 7: 1) the MIG is wholly responsible for function 7, and 2) the MIG is overall responsible with the assistance of all other parties who have personnel or own assets that interact with the information environment. Both COAs deserve consideration in future exercises and war games.

l. Deliberate vs Dynamic Targeting

The difference between deliberate targeting and dynamic targeting in the information environment is a topic that was visited by numerous interview participants. It seems that OIE do not always fall into the neat 72 to 96-hour timeline previously discussed regarding the targeting process. The targeting process cannot govern certain aspects of

collections and assessments regarding OIE because they take far too long. However, the targeting process can address those items as they occur. On the other hand, some aspects of OIE occur very quickly, are fleeting, and require immediate action. Previously these types of issues were handled by the reactive attack guidance matrix (RAGM) and were managed by the G-3. However, the interviews showed that it is very difficult to coordinate fleeting opportunities in the information environment because of the multiple agencies that exist and must be coordinated within the information environment. Therefore, the MEF CE has had a difficult time generating tempo in the IE. The interviews show that the solution to this problem is the MIG conducting current operations in the information environment because they will have all of the relevant entities available in their OCC to react and coordinate quicker than an on-call working group could possibly react. A quick reaction speed generates tempo, which is a goal of the MEF CE strategy in the information environment. Processes to set the MIG up as a current operations cell for the information environment should be explored heavily in the future.

3. Process Implications from the Survey

The survey contained no questions that specifically targeted MEF CE processes. However, I did ask what kind of task design the MEF CE uses. The consensus answer was that the MEF CE utilizes a process production, which is an organization that uses mass production to accomplish complex tasks performed by a highly skilled labor force. This answer makes sense for the MEF CE considering how it utilizes the Daily Battle Rhythm, the planning process, and the targeting process repetitively (mass production) to solve complex problems (operations against a peer competitor) by a skilled labor force (the MEF CE and MIG staffs). The implication of the process production task design is that everyone needs to understand the process to achieve effectiveness. This section has highlighted that there are multiple processes that experience friction with the addition of the MIG and several functions that lack a unified process. These lack of clear processes means the MEF CE will not achieve the results it is aiming for because the elements of its organizational design do not match. Once these processes are generated, deconflicted, and are clearly understood by all members of the MEF CE, the MEF CE can become a more effective organization.

D. REWARDS

The rewards design category is one that is often overlooked in most organizations. That is certainly the case at the MEF CE with OIE. "The purpose of the rewards system is to align the goals of the employee with the goals of the organization. It provides motivation for the employee to carry out the strategic direction. The organization's reward system defines policies regulating salaries, promotions, bonuses, profit sharing, stock options, and so forth" (Galbraith, 2009, pp. 16–17). The main rewards systems elements that exist at the MEF CE are provided by the Marine Corps as an institution: positive fitness reports, awards, opportunities for advancement, and opportunities for command.

While there are a variety of military occupational specialties (MOS) that conduct OIE to include intelligence, communications, cyber, maneuver and fires, and communications strategy, they are not the primary planners of OIE. The Marines with the above MOSs are contributors to that planning and execution involved with OIE. The primary planners to include 8834s (Technical Information Operations Officers), 0510s (Basic Information Operations Officers), and 0550s (Advanced Information Operations Officer) are secondary MOSs. Serving in one of these billets means that an Officer is serving outside of his/her primary MOS. This is a major problem under the Marine Corps' current rewards system because service in a billet outside of a Marine Corps Officer's MOS is not treated the same as service in a primary MOS. For instance, a Marine Corps Captain needs to serve as a Company Commander to remain competitive for future promotion. It is certainly not required, but it is more difficult to promote without that experience. Further, a Major requires time in a key billet to remain competitive for promotion and particularly to remain competitive for Command, which dictates future promotion beyond the grade of O-5. Again, these are not rules, but the deck is stacked against an Officer who does not serve in the manner prescribed. For instance, in the last three years the highest percentage of the Officers selected for O-5 level Command who did not also serve in a key billet as a Major was 11% (USMC, 2017b, slide 22).

Blooming where planted is important for a Marine Corps Officer and it is the hallmark of the performance evaluation system. An Officer serving in a billet that is not in his/her primary MOS still has the capability to receive a positive fitness report based on

good performance, receive an award, and continue to promote. However, it is more difficult to obtain a promotion and much more difficult to receive Command. This experience is magnified for those who have to spend time outside of the operating forces to receive training or education for the secondary OIE MOS. The training for an 0510 and 0550 is not that troubling, totaling less than six weeks of training. However, an 8834 must attend two full years at Naval Postgraduate School, where they receive a not observed fitness report, and then serve three years in a payback tour in their secondary MOS. Depending on career timing for this education and payback, the Marine Officer may not have the opportunity to receive a key billet, and thus is not equal in the eyes of the Marine Corps' rewards system. According to the SEP monitor, while the FY18 LtCol promotion board shows a slightly higher promotion rate for personnel with an 08XX secondary MOS (graduate-level education), the results are the opposite for selection to Lieutenant Colonel Command (email to Senior Marine Representative at NPS, 23 January, 2018). This causes a negative domino effect for 08XX personnel not promoting beyond the rank of Lieutenant Colonel because successful Command is often a prerequisite to promotion to Colonel or General Officer. This lack of opportunity for Command and ultimately lack of opportunity for advancement has a negative effect on the motivations of the individual, which ultimately may not align with the goals of the organization. The rewards system must be addressed at the MEF CE and the Marine Corps to obtain peak performance from its individuals and organizations.

1. Reward Implications from the Semi-structured Interviews

Although no questions were asked concerning the rewards system at the MEF during the semi-structured interview process, several personnel mentioned the promotion and command problems listed in the previous section. Most of these comments came from personnel who had attended Naval Postgraduate School in the past and were finding limited career opportunities due to poor career timing. It is worth noting that the individual has absolutely no input in the decision to attend school or serve in a secondary MOS.

Several methods to mitigate negative impacts were discussed such as short-touring the payback tour, deferring the payback tour, or perhaps precepting the Command board.

However, each of these items cause other problems for the institution. It will take a holistic manpower approach to solve this problem. One method that I discussed during the interviews that has some promise is making a career track for OIE personnel. There are other reasons that this is a viable option that will be discussed in design category five, but it would certainly help to balance the rewards for individuals serving in those billets.

2. Reward Implications from the Survey

Two questions on the survey purposefully targeted the rewards category. The first questions asked the survey respondent the basis for designing incentives at the MEF CE. The consensus answer, with 45% of the response, was group-based results. However, at least 23% found that individual results were just also important to incentives. Either way, this speaks to how the fitness report and awards systems rewards personnel based upon their and their group's results. This does not take into account future service.

The second question targeted future service more cleanly. I asked the survey respondents how career opportunities of Officers in OIE positions compared to the same rank personnel serving in primary MOSs at the MEF CE. Of the responses, 73% were either below average or greatly below average. The statistic supports my assertion that serving in secondary MOS billets while conducting OIE puts the Marine Corps Officer at a disadvantage when compared to his/her peers.

3. Rewards Implications from ORGCON

ORGCON determined that it is just as likely that incentives should be based on group results as individual results with certainty factors of 75% and 73% respectively. Results based incentives are positive for the MEF CE, yet they do not address the institutional problems detailed earlier concerning promotions and Command opportunity. In other words, the rewards system imbalance at the MEF CE is not something that can be fixed by the MEF CE. The institution must fix this problem. Until then, the MEF CE will continue to be hampered by the institution's imbalanced rewards system.

E. PEOPLE

People is the final design category of the Star Model. "This area governs the human resources (HR) policies of recruiting, selection, rotation, training, and development. HR policies—in the appropriate combinations—produce the talent required by the strategy and structure of the organization, generating the skills and mind-sets necessary to implement its chosen direction" (Galbraith, 2009, p. 17). Another method of viewing the people category is having the right person, in the right billet, at the right time, with the right set of skills to accomplish the intended mission.

1. People in the Marine Corps

This section defines the norm with regards to personnel management in the Marine Corps. I focus on Officer personnel management, but most of the principles apply to Enlisted Marines as well.

a. Recruiting and Selection

Marine Corps recruiting for Officers is based upon minimum standards for scholastic assessment, physical fitness, and leadership potential. The Marine Corps has many tools to select well-rounded and qualified young Marine Corps Officer and it excels at bringing in some of the best and brightest young Americans to serve in the United States Marine Corps.

The majority of Marine Corps Officers do not get to directly select their primary MOS. Instead it is chosen for them at The Basic School based upon their performance, the needs of the Marine Corps, and the individual's desire to serve in a particular occupational field. Once a Marine is assigned a primary occupational skill, the Marine Officer will maintain that MOS until the grade of O-6 with little exception to policy outside of the lateral transfer process.

Further selection in the service is primarily merit based. For instance, selection to the next grade, coveted assignment selection, and selection to attend schools are based upon a relative evaluation of a Marine Officer's performance compared to their peers. The Marine Corps follows the up or out model, which gives the Marine a certain amount of

time to promote relative to his/her peers. Unfortunately, there are items that can inadvertently take a Marine Corps Officer off track, such as poor timing for graduate-level education and payback tours, which may have a negative impact on promotion and Command selection. Once a Marine Officer does not promote for two consecutive boards, he/she is generally discharged from the service.

b. Rotation

Marine Officers rotate duty assignments every three years. Their rotation location is based upon the Marine Corps' desire to ensure that personnel are well rounded in their service. Rotation is based upon service in various parts of the MAGTF, service location, desire to rotate between operating forces and support duty stations, opportunity for advancement, shared hardships, the needs of the Marine Corps, and personal desires.

c. Training and Education

All Marine Officers are college graduates (bachelor's degree), attend the Basic School, and receive follow on basic training in their assigned primary MOS. Subsequent advanced training for MOS proficiency is different for all MOSs but desired. PME is highly regarded in the Marine Corps and opportunities to attend resident PME or participate in non-resident PME are afforded to all Marine Corps Officers at the grades of Captain, Major, and Lieutenant Colonel. PME is all but required for advancement.

There are several opportunities for graduate level education that are afforded Marine Corps Officers based upon board selection. However, these opportunities are not voluntary and are based upon the needs of the Marine Corps. Further, graduate level education is tied to a payback tour for Marines based upon the degree assigned.

In the rewards category, I discussed the rewards concerns with a secondary MOS assignment. There are also concerns centered on training, education, and reutilization. Beyond basic training, PME, and graduate level education, an Officer's education is up to him/her. In the case of the OIE secondary MOSs, a Marine Officer attends a short school to receive a minimum level of education to serve in that secondary MOS. EWTGLANT and MCIOC are examples of Marine Corps organizations that provides training for OIE

Marines. However, the MOSs offered are limited. The Marine Corps looks to the Army for access to a variety of schools for IO, and while seats can be found, they are difficult to obtain due to limited numbers. This is a problem for both enlisted and officer MOSs serving in the OIE field.

Officers only typically spend three years or less in their secondary MOS due to promotion concerns. Unfortunately, it takes time and experience in a secondary MOS to generate the level of proficiency needed to become an effective OIE planner. Therefore, the Marine Corps is not receiving a large return on investment. Subsequent utilization tours are an example of a mechanism that could improve the Marine Corps' investment in their OIE personnel. However, reutilization tours cause an Officer's chances for advancement to diminish extensively. This problem is compounded by the many types of disciplines it takes to conduct OIE. The Marine Corps Officer must learn facets of the electromagnetic spectrum, space, cyber, influence, inform, and deceive operations in addition to their normal knowledge with regards to the MAGTF. This education takes a long time to develop. Without some sort of change to the manner in which the Marine Corps educates, trains, and provides experience for OIE MOSs, the institution is not providing a roadmap for the preparation to become a MIG OPSO or MIG CO in the future. The Marine Corps must reevaluate their talent management to achieve better performance for the tactical units such as the MEF CE.

d. Personal Development

Personal development for a Marine Corps Officer includes all of the education, training, and rotation mechanisms previously discussed. It also includes developing a well-rounded Marine Corp Officer by providing the opportunity to serve in both Command and staff billets and preparing an Officer for service as a Battalion-level Commander. Currently that mechanism is missing for those serving in secondary OIE MOSs.

2. People Implications from the Semi-structured Interviews

I did not ask any direct questions regarding the people design category. However, when I asked the interview participants what concerns they had regarding the implementation of the MIG into the MEF CE, 30 of the 66 responses were based upon

concerns with the people category. The list below contains the people-based responses with tick marks representing the number of times the answer was given:

- MIG will fail because of lack of education and training (IIIIIIIIII)
- Talent Management – how to attract and keep (IIII)
- Security Clearance Issue (IIII)
- Right mix of MOSs (III)
- Reutilization Tours (II)
- No lawyer on T/O (II)
- MOS structure (II)
- Grooming the MIG CO
- Personnel experience is young at best – no best practices exist
- 2025 too soon without the right MOS mixture – recruiting incentives to move to IO (Cyber structure accomplishes this feat)

The major concern on this list is the lack of education and training of the personnel at the MIG. However, each of the concerns listed are valid and merit consideration when exercising and war gaming the new MEF CE organization.

3. People Implications from the Survey

I asked two questions on the survey that were directly related to the people category of the MEF CE organization:

1) On average, how many tours do Officers serving in OIE billets at the MEF CE spend in the OIE field during a career? 68% of the survey population answered one tour. This answer confirmed my suspicion that those Marine serving in OIE billets typically only serve one payback tour leading to the continual reset of OIE experience at the MEF CE.

2) In general, what are the training and education levels of Officers responsible for OIE compared to the same rank of Officers serving in primary military occupational specialties (MOS) at the MEF CE? 53% of the survey population answered below average or greatly below average, 30% answered same or equal, and 16% answered above average or greatly above average. This data is significant because multiple OIE personnel serving in OIE billets just finished two years of graduate school before joining the billet. This mismatch at first glance does not make sense. The reason for my original diagnosis is that while the OIE billets often require advanced education, the experience in training of OIE personnel do not even come close to the experience level of personnel serving in their primary MOS at the MEF CE. The comparison is typically zero to three years of experience for OIE personnel next to ten to twenty years or more of experience for primary MOS personnel of the same grade. The difference is that primary MOS personnel benefit in their assignment from their experience gained while developing in their primary MOS since the time that Marine entered the Marine Corps.

F. STAR MODEL ANALYSIS CONCLUSION

Chapter VI provided a qualitative analysis of the MEF CE's organization through the lens of Galbraith's Star Model. The analysis utilized current Marine Corps doctrine and concepts, semi-structured interviews of Marine Corps personnel, and a survey of Marine Corps personnel to define each of the five design categories of the Star Model: strategy, structure, processes, rewards, and people for the MEF CE organization. I pointed out where gaps and confusion exist within each category, which leads to suboptimal performance at the MEF CE. These organizational gaps provide the institution focused areas for future experimentation and war gaming regarding the reorganization of the MEF CE. Where appropriate, possible courses of action were provided to assist the Marine Corps and MEF CE with better aligning elements of the MEF CE's organization in the future. A summary of the results and recommendations from the Star Model analysis are listed in Table 22.

Table 22. Summary of Star Model Analysis Results

Star Model Category	Issue	Recommended COAs to War Game
Strategy	Function of the MIG not readily understood by MEF CE personnel	DC I adjusts the function of the MIG to include scope and relationship with other MEF CE entities
Structure	Distribution of power within the MEF CE unclear	1) Allocate swim lanes between the MIG and the members of the MEF CE staff 2) DC I ensures that USMC publications do not contradict the MIG role, scope, and relationships with the MEF CE staff
Structure	Unclear where the MIG responsibility lies in planning OIE	1) The MIG is the lead for all planning and execution of OIE 2) The appropriate MEF CE staff section is the lead for planning OIE while the MIG is responsible for supervising the execution of OIE
Processes	Unclear who should lead future OIE B2C2WGs	1) The MEF CE continues to lead all B2C2WGs with MIG participation 2) The MIG leads the OIE WG and subordinate WFGs, which feed into a G-3 led Targeting WG for whole of staff coordination
Processes	Unclear of responsibilities for processes in OIE Function 1	1) The G-6 manages and directs actions on the DODIN and DCO-IDM 2) The G-6 manages and directs actions on the DODIN while the MIG holds the responsibility and authority for directing DCO-IDM
Processes	Unclear of responsibilities for processes in OIE Functions 2-6	1) The MEF CE continues to lead all planning while the MIG oversees execution of function 2-6 of OIE 2) The MIG is responsible for planning, coordinating, and executing functions 2-6 of OIE
Processes	Unclear of the entity who maintains the responsibility and authority to clear fires for non-lethal OIE	1) The MEF COC, specifically the COPs section of the FECC clears OIE fires 2) The MIG OCC clears OIE fires
Rewards	OIE billets are secondary MOS billets leading to conflict between Marine Corps need and individual incentives such as promotion and Command selection rates	1) Precept promotion and Command screening boards to offset career progression concerns that adversely affect promotion and Command opportunity due to service in an OIE secondary billet 2) Create a professional OIE MOS structure capable of advancement
People	Education and training for OIE billets are inadequate	1) Professionalize the school system in the Marine Corps for OIE 2) Create professional OIE primary MOS schools and subsequent advanced schools for advanced OIE training
People	Experience for OIE billets is inadequate	1) Reutilization tours 2) Create a professional OIE MOS structure capable of generating and maintaining experience in OIE

VII. RECOMMENDATIONS AND CONCLUSION

In this thesis, I introduced the foundational problem the Marine Corps faces for the future operating environment. "The Marine Corps is currently not organized, trained, and equipped to meet the demands of a future operating environment characterized by complex terrain, technology proliferation, information warfare, the need to shield and exploit signatures, and an increasingly non-permissive maritime domain" (USMC, 2016c, p. 8). The MEF Command Element (CE) has completed an initial reorganization to meet these challenges, which this thesis details as well as the implications caused by change that occurred across the organization in order to answer the following question. Is the MEF Command Element (CE) organized properly to operate with peak performance in the future operating environment? To answer this question, I conducted a foundational doctrine and concept review, semi-structured interviews of Marine Corps personnel, and a survey of Marine Corps personnel to provide inputs into two tools used for analysis. The first tool I used was Organizational Consultant (ORGCON), an expert system designed to measure the level of organizational fit in an organization. The second tool I used was the Star Model, which is a framework intended to guide design choices in an organization.

Both tools assisted with a rigorous analysis of the MEF CE and led to the conclusion that, while the initial reorganization proved helpful, it needs to go farther, adjusting several organizational design misfits that may currently serve to keep the MEF CE from obtaining peak performance in the future operating environment. This thesis recommends six organizational design adjustments to both the MEF CE and the larger Marine Corps, because, as I researched, I realized that the Marine Corps' large-scale design choices also impact the performance of the MEF CE. These conclusions and recommendations are meant to inform future research and experimentation at the Marine Corps and the MEF CE levels as they continue to adapt the force to its future operating environment. Chapter VII details these conclusions and recommendations and provides areas for future research resulting from the conduct of this thesis.

A. RECOMMENDATIONS

In this section, I discuss the most significant conclusions and recommendations resulting from both the ORGCON and Star Model analyses of the MEF CE, and I offer six recommendations for change to improve fitness. Improving fitness would allow the MEF CE to increase its performance while conducting operations against a peer competitor in the future operating environment.

1. Increase the Level of Education and Training of Personnel Responsible for OIE at the MEF CE

Both the ORGCON and Star Model analyses result in a recommendation to raise the level of education and training for MEF CE personnel responsible for operations in the information environment (OIE). While a higher level of education and training does exist for many functions that the MEF CE performs, that is not the case for personnel serving in OIE billets. In the ORGCON analysis, the lack of education and training led to a strategic misfit with the MEF CE's non-routine technology. However, a non-routine technology is a good fit with MEF CE goals and strategy, meaning the mismatch resulted from the lack of education and training of MEF CE personnel. Therefore, raising the level of education and training of personnel planning and conducting OIE should result in a better organizational fit.

The Star Model analysis, supported by semi-structured interviews and surveys of Marine Corps personnel, also indicated that personnel serving in OIE billets at the MEF CE lack proper education and training. Personnel charged with planning and conducting OIE often receive only ancillary training in their secondary MOS. Even those individuals who receive a formal graduate-level education in information warfare lack the necessary training and experience to immediately operate at the expected level at the MEF CE. Furthermore, those personnel typically only serve one tour of duty in their nonprimary OIE MOS due to career progression concerns. Thus, the primary reasons for lack of education and training in OIE at the MEF CE is lack of school seats, lack of experience in the field due to nonprimary MOS assignment of OIE billets, and lack of prioritization.

Although this problem manifests itself at the MEF CE, the ability to effect required change lies with the greater Marine Corps institution. While the MEF CE can provide more focus and funds for existing OIE school seats, this approach will yield minimal results in the long run. To increase the overall education and training of personnel conducting OIE at the MEF CE, the Marine Corps as a whole will have to make some tough decisions regarding the importance of OIE in future conflicts.

I suggest two ways in which the Marine Corps can address this shortfall. The first is to ensure that those personnel who have received special education and training in OIE MOSs serve multiple utilization tours in their secondary MOS. This change would effectively ensure they have the proper time to leverage that experience for follow on tours at the MEF CE. However, this change would require adjustment to the Marine Corps manpower model due to the negative impact on the individual's career, which would affect their ability to advance beyond a certain grade and compete favorably for Command. The second method is to build a primary MOS structure for the OIE skill sets. This method requires a significant investment in funds and personnel management. However, it would alleviate the career timing concerns of those individuals serving in OIE billets and increase the personnel's ability to gain experience and pay back that experience as they progress in grade. Either method would increase the level of education and training at the MEF CE of those personnel serving in OIE billets; this would increase the organizational fitness of the MEF CE and its ability to obtain peak performance in the future operating environment.

2. Incorporate Individual Incentives for OIE Personnel at the MEF CE

The ORGCON analysis indicated that both individual and group-based results are equally important factors when determining the incentives structure at the MEF CE. However, the Star Model analysis yielded the conclusion that individual incentives are not applied equally for personnel serving in OIE billets. OIE billets are filled by personnel serving in a nonprimary MOS. Therefore, those individuals do not receive the same consideration or incentive to serve in these billets due to career timing. The Star Model analysis indicates that, while it is not the Marine Corps' intent to penalize personnel serving in OIE billets, it is largely unavoidable given the current manpower model for promotions

and Command selection. This imbalance generates a negative effect on the motivations of individuals, which ultimately may not align with the goals of the organization. Thus, the incentives system should be addressed at both the MEF CE and the Marine Corps levels to obtain peak performance from its individuals and organizations.

Much like education and training, the MEF CE only has a minimal impact on the capability to change incentives because they are generated by the Marine Corps as an institution. Therefore, the Marine Corps should take action to address this organizational imbalance. I recommend two courses of action (COA) for the Marine Corps to consider. The first COA recommends continuing to provide personnel for OIE assignments from outside MOSs but also seeking more creative means to alleviate the negative career timing implications of individual Marines. Methods to accomplish this alleviation include: offering more opportunities to short tour, deferring OIE payback tours after receiving formal education, and instituting a promotion board and Command board precept that looks favorably upon service in an OIE billet. Considerations must be given to the individual, but short tour and deferment considerations have the impractical potential of negatively impacting the institution. Although I am not optimistic about the short-term results from this course of action, it is the less invasive COA for the institution. The second COA recommends developing a primary MOS structure for OIE personnel. This thesis has highlighted the importance the Commandant of the Marine Corps has placed on the development of OIE capabilities to the Marine Corps, and this recommendation is the next step toward that end. Also, the COA will more effectively eliminate the lack of individual incentives currently experienced by those serving in OIE billets in the Marine Corps today by providing equal opportunities for continued advancement and consideration for Command. Both COAs will address the lack of organizational fitness experienced at the MEF CE, ultimately increasing its capability to obtain peak performance in the future operating environment.

3. Transition to a Developmental Climate at the MEF CE

Based upon the inputs to the MEF CE scenario, ORGCON diagnosed the MEF CE to possess a group climate. Group climate is a strategic misfit with a very unpredictable

environment. The two strategic factors do not fit well together because a group climate is indicative of a resistance to change in the organization. However, change is required by the nature of an unpredictable environment. My analysis of this misfit, in Chapter V, determined that the environmental strategic factor value was correct given combat operations against a peer adversary. To obtain an overall better level of fitness in the organization, the group climate must change.

To bring the strategic factors into alignment, the best possible course of action is to foster a developmental climate at the MEF CE as opposed to a group climate. The developmental climate still possesses low tension between members of the organization, but it also includes a greater readiness to incorporate internal change. To enact this change, the MEF CE personnel require more focus on the external environment and the adversary, rather than focus on the internal process of the organization. This external focus provides the MEF CE the possibility to innovate processes that are more flexible given the adversary's chosen course of action and other environmental factors. During combat operations, the MEF CE may naturally move towards a developmental climate; however, leaders in the MEF CE should be aware of this required shift and look for ways to enhance this change. The MEF CE can achieve a developmental climate by ensuring their personnel are willing to adapt their processes and products based upon the changing environment in response to the adversary's action.

The group climate is also a strategic misfit with the MEF CE's current strategy. However, when the group climate shifts to a developmental climate, this second strategic misfit also ceases to exist allowing the climate shift to eliminate two strategic misfits with one organizational change. Also, the MEF CE's group climate and relationship-driven knowledge exchange (design factor) do not fit well together resulting in a contingency misfit. A contingency misfit is developed when and organization's strategic factors do not match well with an organization's design factors. Although a group climate is not viewed as a favorable strategic fit for the MEF CE, a relationship-driven knowledge exchange is not a mismatch for the MEF CE. Again, changing the group climate to a developmental climate eliminates the misfit (see Chapter 5). Changing the MEF CE's current group climate to a developmental climate thus eliminates three organizational misfits for the MEF

CE resulting in better overall organizational fitness, which allows the MEF CE to obtain peak performance in the future operating environment.

4. Develop a Transnational Geographic Distribution at the MEF CE

The ORGCON analysis also revealed a contingency misfit caused by a leader style and an international geographic distribution. The analysis in Chapter V shows that, while the leader style fits well at the MEF CE, the international geographic distribution requires change. Changing the geographic distribution model from international to transnational by increasing local responsiveness eliminates this design misfit.

Research states that a transnational geographic design choice fits best with a matrix structure (Burton et al., 2006), which I determined as the best structural fit for the MEF CE in both analyses. This conclusion means that optimal sourcing, the "location in the world that brings the greatest advantage" (EcoMerc, 2017), remains high while the MEF CE needs to change its organization from a low to high level of local responsiveness. In the future operating environment, this could simply mean the ability to detect and react along Marine Corps lines of communication. For example, a MEF's tactical communications networks at a port where critical supplies are flowing into theater are much more vulnerable to attack than those hardened communications nodes located geographically closer to the enemy. Traditionally, these lines of communications located behind enemy lines have not been a major concern of a tactical unit such as a MEF CE. However, given the global nature of the future operating environment and the cyber-enabled capabilities of a peer adversary, it is increasingly likely that the adversary will strike the MEF's critical vulnerabilities as opposed to fighting it head on. This analysis applies both the Marine Corps' doctrine of maneuver warfare (USMC, 1997) and the future operating environment to a peer adversary. Therefore, the MEF CE should take steps to make an organizational change to its geographic design choice. Instead of international, the MEF CE needs to become transnational by increasing its local responsiveness to outlying locations in the IE. This action should increase the level of organizational fitness at the MEF CE, thus enabling peak performance in the future operating environment.

5. Fully Define the Distribution of Power at the MEF CE

The Star Model analysis, supported by both interviews and surveys of Marine Corps personnel, revealed that the distribution of power at the MEF CE is unclear. Current doctrine is often ambiguous or portrays conflicting views on command relationships within the MEF CE. When the MIG was created, it was assigned a clear mission and intent. However, the mission conflicted with the previously existing functions of multiple entities on the MEF CE staff (G-2, G-3, G-5, G-6, Comm Strat). Unfortunately, the MIG and MEF CE staff functions have not been deconflicted leading to confusion and lack of organizational clarity. The following items regarding the distribution of power at the MEF CE should be clearly articulated in Marine Corps doctrine and concept and MEF regulation:

- The functions of the MEF CE staff with regard to mission, scope, and command relationships relative to the MIG and its subordinate battalions
- The functions of the MIG staff with regard to the mission, scope, and command relationships relative to the MEF CE staff and its subordinate battalions
- Determine whether the MIG or the MEF CE is the primary entity delegated planning responsibility for OIE
- Determine whether the MIG or the MEF CE is the primary entity delegated current operations and fires clearance responsibility and authority for OIE

Once these items are addressed, the conflict that currently exists within the MEF CE should subside, leading to better organizational fitness.

There are two courses of action that the MEF CE and the Marine Corps can take to resolve this conflict. Either method is likely to work as long as the distribution of power is clear and well understood within the organization. The first method is to split responsibilities of the MIG and the MEF CE along the planning horizon as illustrated in Figure 26. This method leaves some flexibility for MEF CE processes, which the ORGCON analysis suggests is desirable (see Chapter V). The second method is to assign

responsibility for planning and execution of all OIE to the MIG. While this makes sense given the rank and experience level that will one day exist in the MIG compared to the FECC regarding nonlethal fires, gaps in planning could then potentially exist between OIE and other kinetic operations planned by the rest of the MEF CE staff. In this scenario, the MIG requires complete immersion in MEF CE planning to ensure clearly integrated planning. However, this action would nearly replace the need for a FECC entirely. I argue that COA 1 is more viable, but both merit future consideration as they will increase organization fit, thus increasing the performance of the MEF CE in the future operating environment.

6. Develop OIE Processes at the MEF CE

The addition of the MIG to the MEF CE resulted in process shortfalls. These shortfalls are a byproduct of the organization's lack of definition regarding relative distribution of power within the organization. In other words, the MEF CE cannot completely solve its process problems until it addresses its structural lack of clarity. However, the analysis did suggest that the Daily Battle Rhythm is an area where the MEF CE should incorporate planning and fires processes for OIE.

The Star Model analysis found that while not all timelines are the same, planning for OIE should fall within the Daily Battle Rhythm, specifically within the targeting series of boards and working groups to ensure coordination and synchronization with all other operations at the MEF CE. The question in the organization that currently exists is once the MIG is FOC, who is responsible for leading these groups concerning OIE? There are two courses of action that merit further experimentation from the Star Model analysis: 1) The MIG takes the lead for both planning and execution by leading the OIE working groups that feed the targeting working group and 2) the MEF CE staff leads all plans while the MIG supervises the execution of all OIE. This decision should ultimately nest within the decision on the distribution of power within the MEF CE.

Regardless of power distribution, the Star Model analysis details natural points of conflict that will continue to exist between the MEF CE staff and the MIG due to the nature

of a matrix organization. These points of conflict exist along six of the seven functions of OIE. The MEF CE will need to develop processes to address the following areas:

- Function 1: Assure Enterprise C2 & Critical Systems. The MIG, Communication Battalion, and the MEF G-6 require work processes to delineate responsibility of DODIN Ops and DCO. There are two COAs that merit future experimentation. The first is to give authority to the MEF G-6 for both DODIN Ops under COMMCON and DCO-IDM. The second is to give authority to the MEF G-6 for DODIN Ops under COMMCON but give authority to the MIG to implement DCO-IDM due to its need for coordination with other OIE. Each COA will lead to the development of different horizontal processes within the Daily Battle Rhythm process.

- Function 2: Provide IE Battlespace Awareness. The MIG, Radio Battalion, Intel Battalion, and MEF G-2 are recommended to continue the same command relationships that existed under the MHG construct. However, work processes are required to determine responsibility for OIE inputs to the IPB, intelligence inputs/outputs from the G-2 to the MIG and vice versa in real-time, the training continuum t provide IE-focused intelligence support, the processes to provide intel support to the IE focused COP, and real-time coordination for targeting assessment in the IE.

- Function 3: Attack & Exploit Networks, Systems, and Information. The MIG, Radio Battalion, and MEF G-3 require processes to deconflict the request for, fires clearance, and execution of offensive cyberspace operations (OCO) at the MEF CE. There are two COAs that merit future experimentation. The first is to give responsibility for planning OCO to the MEF G-3 and fires clearance and execution for OCO to the MIG. The second COA is for the MEF CE to delegate planning and execution of OCO to the MIG. Both COAs assume an addition of tactical level

authorities for OCO at the MEF, but the processes generated should incorporate means for the request and clearance of operational and strategic OCO as well.

- Function 4: Inform Domestic and International Audiences. The MIG and the MEF Communications Strategy Officer require processes to deconflict planning and execution of inform missions. The COAs to support this function mirror function three between the MEF Comm Strat Officer and the MIG.

- Function 5 and 6: Influence and Deceive Foreign Target Audiences. The MIG, MEF G3, and MEF G-5 require processes to deconflict planning and execution of influence and deceive operations at the MEF CE. COA support for these functions mirrors functions three and four between the MEF G-3 and G-5 and the MIG.

The Star Model analysis highlighted multiple MEF CE functions that now experience friction with the addition of the MIG or simply lack unified processes at this time. These lack of clear processes means the MEF CE will not achieve the results it is aiming for because the elements of its organizational design do not match. Once these processes are generated, deconflicted, and are clearly understood by all members of the MEF CE, the MEF CE will become a more effective organization.

B. FUTURE RESEARCH

During the course of the research for this thesis, I came across several areas for future research that I unfortunately could not consider due to scope and time considerations. The following areas would provide additional depth and understanding regarding the Marine Corps and MEF's organizational design and its effectiveness in the future operating environment.

1. Modeling and Simulation with Power

POWER is an organizational modeling and simulation software program that could provide more insight to this problem by modeling the MEF CE. By employing organizational modeling and simulation, organizations can better predict fit. Levitt states that "simulation has advanced the predictive power of the physical sciences and engineering immensely since the late 1960s" (Levitt, 2012, p. 58). For instance, simulation models are used to design buildings and bridges and predict problem areas in their design prior to construction. Firms use these methods widely for design and validation, prior to construction, to significantly save both time and money. However, the physical sciences and engineering fields are not the only areas where this occurs. The social sciences, and specifically, organizational design theory, benefit from a myriad of computational models and simulation programs developed since the 1980s (Levitt, 2012).

The combined use of the ORGCON expert system and POWER to model the MEF CE could yield more useful results because the two programs take different approaches to modeling the issue of organizational fit, allowing for conclusions that produce more comprehensive results. ORGCON, developed by Burton and Obel (2004), takes a macro-level view utilizing multiple-contingency theory and leads to qualitative "suggestions for improving structural and contextual fit" (Levitt, 2012, p. 62). POWER, on the other hand, takes a micro-level view and measures the organizational "fit between the information processing capacity and information processing demand over time" (Burton & Obel, 2004, p. 10). POWER provides both qualitative and quantitative forecasts for organizations that conduct semi-routine processes (Levitt, 2012). Like ORGCON, POWER has gone through extensive testing and validation over several decades and has been further validated through experimentation and consultation with hundreds of companies (Nissen & Buettner, 2004; Levitt, 2012) making it both powerful and relevant for predicting organizational fit. A POWER analysis of the MEF CE could enhance the results of this thesis.

2. OIE Organizational Capabilities at Lower Echelons of the MAGTF

The Marine Corps operates as a MAGTF, often planning in a centralized manner, while executing operations in a more decentralized manner. To accomplish this feat in the

future operating environment, the Marine Corps must also possess OIE capabilities in some format at the MEF's Major Subordinate Commands. Although there is no current concept to accomplish this task published by the Marine Corps, this research provides examples of organizational design principles and best practices to analyze this problem and recommend implementation guidance to the Marine Corps for future use.

3. Primary MOS Structure for OIE Personnel

This thesis' recommendation for the Marine Corps to develop an OIE primary MOS structure is a recommendation that solves multiple organizational design misfits currently residing at the MEF CE. If implemented, this recommendation can increase organizational fitness within the MEF CE making it more likely to obtain peak performance in the future operating environment. However, generating an MOS is often a zero-sum undertaking and would require cuts to exiting warfighting structure and other manpower areas. While this author believes the benefits to warrant the organizational change, further research is required to make that decision to include the makeup of the MOS structure and the formal schools required to grow and maintain the MOS. Based upon the results of this thesis, future research regarding this area of study could potentially benefit the Marine Corps.

C. CONCLUSION

The future operating environment is changing. "This [change] requires the MAGTF to plan and employ a wide range of new capabilities cohesively and in a way that emphasizes both the physical and cognitive aspects of any mission. To achieve this, the MAGTF must be appropriately organized, trained, and equipped to ensure operations in this evolving environment become seamless and intuitive" (USMC, 2017c, p. i). To prepare for this environment, the Marine Corps directed organizational change at the MEF CE level. The initial phase of the change occurred quickly and was meant to provide a "provide a starting point for experimentation, wargaming, and training exercises to discover and refine this capability in the coming years" (USMC, 2017c, p. 3).

This thesis incorporated an organizational design analysis to ascertain whether the reorganized MEF CE was organized properly to have the greatest likelihood of attaining peak performance in this future operating environment. The analysis and results show that,

while the reorganization was positive, multiple organizational misfits currently remain at the MEF CE. This thesis has provided recommendations to adjust these organizational design choices to bring them into a better overall level of organizational fitness, thus increasing the MEF CE's ability to perform in the future operating environment. It provides recommendations to focus and inform future experimentation and decision-making as the Marine Corps and the MEF CE continues to adapt to the future operating environment in the coming years.

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APPENDIX A. ORGANIZATIONAL DESIGN LITERATURE CONSIDERED

This Appendix includes a complete listing of the organizational design literature considered. For a full listing of works cited, view the References at the end of this thesis.

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APPENDIX B. MARINE CORPS AND MEF DOCTRINE AND POLICY CONSIDERED

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APPENDIX C. BLANK ORGCON INPUT QUESTIONS

***Note 1: Appendix C is an exact replica of the input questions taken as an output report directly from:
EcoMerc. (2015). Organizational consultant (ORGCON) (Version 9.1) [computer software]. Retrieved from https://ecomerc.com/orgcon/***

Goals

Effectiveness and Efficiency

What is the goal with respect to the degree of efficiency?
What is the goal with respect to the degree of effectiveness?

Environment and Strategy

Environment

Is the organizational environment simple or complex?
What is the level of uncertainty of the environment?
Is the equivocality of the environment low or high?
Is the organizational environment hostile - how tough is the competition?

National Culture

The power distance is:
The level of uncertainty avoidance is:
The level of masculinity is:
The level of individualism is:

Strategic Exploitation and Exploration

Does the organization have a high or low product innovation?
Does the organization have a high or low process innovation?
Does the organization have a high or low concern for quality?
How does the organization's price level compare to its competitors?
Does the organization operate in an industry with high or low capital requirements?

Diversity

Does the organization have many different products?
Does organization operate in many or few different markets?
Does the organization operate in more than one country? If yes, is the activity level abroad greater than 25%?

Does the organization have many different products in the foreign market?

Structure

Current Configuration

What is the organization's current organizational configuration?
Is the current organizational configuration a bureaucracy?
What is your organizations degree of IT-infusion?
What is your organizations degree of virtualization?
What is the current configuration's degree of internationalization?
What is the organizations degree of local responsiveness?
What is your organizations degree of optimal sourcing?

Current Complexity

How many different job titles are there?
What proportion of employees hold advanced degrees or have many years of specialized training?
How many vertical levels separate the chief executive from those employees working at the bottom of the organization?
What is the average number of vertical levels for the organization?
Including the main center, how many geographic locations are there where organization members are employed?
What is the average distance of these outlying units from the organization's main center?
What proportion of the organization's total work force is located at these outlying units?

Geography

To what extent are the units of your firm located close to corporate headquarters or far from corporate headquarters?
To what extent does your firm consolidate work in one region of the world or does it distribute its work to many locales?

Knowledge

What is the overall volume of data that the organization must collect, process, and store on a regular basis?
What is the tacit nature of the information that the organization must collect, process, and store on a regular basis?

Process and People

Technology

What is the major activity of the organization?

What kind of technology does the organization have?
Does the organization have a routine technology?
Is the technology divisible?
Does the organization have a strong or weak dominant technology?
Does the organization use or plan to use an advanced information system?

Organizational Climate

The level of trust - sharing, openness, confidence - is:
The level of conflict - disagreement, friction - in this organization is:
The employee morale - confidence, enthusiasm - in this organization is:
Rewards are given in an equitable fashion:
The organization's resistance to change is:
The leadership credibility - respect, inspiration, acceptance - is:
The level of scapegoating - shifting of responsibility for actions which fail - is:

Leadership Style

With respect to centralization/decentralization. What kind of decisions does the top management prefer to make?
Does the management prefer to make long-term decisions or short-term decisions?
Does top management prefer to use very detailed or very aggregate information when making decisions?
Are management proactive or reactive on taking action?
What is top management's attitude towards risk?
What kind of motivation and control does top management prefer?

Size and Age

Size

How many employees does the organization have?

Age/Ownership

How old is the organization?
What kind of ownership does the organization have?

Coordination and Control

Current Centralization

How much direct involvement does top management have in gathering the information they use in making decisions?
To what degree does top management participate in the interpretation of the information input?
To what degree does the top management directly control the execution of decisions?
How much discretion does the typical middle manager have in establishing his or her budget?
How much discretion does the typical middle manager have in determining how his or her unit will be evaluated?
How much discretion does the typical middle manager have in hiring and firing personnel?
How much discretion does the typical middle manager have over personnel rewards - (i.e., salary increases and promotions)?
How much discretion does the typical middle manager have over purchasing equipment and supplies?
How much discretion does the typical middle manager have over establishing a new project or program?
How much discretion does the typical middle manager have over how work exceptions are to be handled?

Current Formalization

Written job descriptions are available for?
Where written job descriptions exist, how closely are employees supervised to ensure compliance with standards set in the job description?
How much latitude are employees allowed from the standards?
What percentage of non-managerial employees are given written operating instructions or procedures for their job?
Of those managerial employees given written instructions or procedures to what extent are they followed?
To what extent are supervisors and middle managers free from rules procedures, and policies when they make decisions?
What percentage of all the rules and procedures that exist within the organization is in writing?

Current Incentives

What is the basis for designing incentives?

APPENDIX D. MARINE CORPS SURVEY QUESTIONS

***Note 1: Questions 2-8 are adapted or copied from:
EcoMerc. (2015). Organizational consultant (ORGCON) (Version 9.1) [computer software]. Retrieved from https://ecomerc.com/orgcon/***

***Note 2: Definitions are adapted or copied from:
EcoMerc (2017). Distance training course for ORGCON. Retrieved October 10, 2017, from https://orgcon.ecomerc.com/content/distant-training-course-orgcon***

Question 1:

(Insert consent question here – see consent handout)

Question 2:

In organizational design theory, efficiency is defined as "an organization's goal priority that contrasts with effectiveness (EcoMerc, 2017)". "Efficiency is a focus on inputs, use of resources, and costs", especially minimizing the costs of results or outcomes (EcoMerc, 2017).

Based on your experience, to what level would you categorize the MEF CE's goals with respect to efficiency (EcoMerc, 2015)?

high
medium high
medium
medium low
low
I do not know or am unsure of the best answer

Question 3:

In organizational design theory, effectiveness is defined as “an organization’s goal priority that contrasts with efficiency” (EcoMerc, 2017). “Effectiveness is a focus on outputs, products, or services”, or producing the desired effect in the intended battlespace (EcoMerc, 2017).

Based on your experience, to what level would you categorize the MEF CE’s goals with respect to effectiveness (EcoMerc, 2015)?

high
medium high
medium
medium low
low
I do not know or am unsure of the best answer

Question 4:

How would you categorize the MEF CE’s ability to attain product innovation (EcoMerc, 2015)?

Note: Think of the MEF CE’s product as integration and coordination mechanisms for the different elements of the MAGTF and/or the MEF CE’s effects in the battlespace (EcoMerc, 2017)?

high
medium high
medium
medium low
low
I do not know or am unsure of the best answer

Question 5:

“Concern for quality is related to the superiority” of the MEF CE’s outputs or effects in the battlespace compared to those of its adversaries (EcoMerc, 2017)?

How would you categorize the MEF CE’s concern for quality (EcoMerc, 2015)?

high
medium high
medium
medium low

low
I do not know or am unsure of the best answer
Question 6:

How does the MEF CE's price level (how much it spends on its products or effects) compare to a near-peer adversary (EcoMerc, 2015)?

Much higher
Higher
Same or equal
Lower
Much lower
I do not know or am unsure of the best answer

Question 7:

In organizational design theory, task design is defined as decomposing work into subtasks while considering the coordination among the subtasks to meet organizational goals (EcoMerc, 2017).

What kind of task design does the MEF CE have (EcoMerc, 2015)?

mass production – "labor intensive and involves a small number of repetitive tasks performed by laborers with low to medium skills" (EcoMerc, 2017).

process production – uses mass production to accomplish "more complex" tasks "than the previous option", which requires higher labor skills in the workforce (EcoMerc, 2017).

unit production – "the activity is customized, unique, and involves a high degree of craftsmanship. Steps are not standardized and/or the final product is highly personalized" (EcoMerc, 2017).

a mass production
a process production
a unit production
I do not know or am unsure of the best answer

Question 8:

What is the basis for designing incentives at the MEF CE (EcoMerc, 2015)?

Individual behavior
Individual results
Group based behavior
Group based results

I do not know or am unsure of the best answer

Question 9:

In general, what are the training and education levels of Officers responsible for information environment operations compared to the same rank of Officers serving in primary military occupational specialties (MOS) at the MEF CE?

Greatly above the average
Above average
Same or equal
Below average
Greatly below the average
I do not know or am unsure of the best answer

Question 10:

In general, how do career opportunities of Officers in information environment operations positions compare to the same rank personnel serving in primary military occupational specialties (MOS) at the MEF CE?

Greatly above the average
Above average
Same or equal
Below average
Greatly below the average
I do not know or am unsure of the best answer

Question 11:

On average, how many tours do Officers serving in information environment operations billets at the MEF CE spend in the information environment operations field during a career?

4 or more
3
2
1
I do not know or am unsure of the best answer

Question 12:

What percentage of time does the MEF CE staff spend on information environment operations during most planning operations or exercises?

Note: Compare planning for information environment operations against time spent planning or preparing for more standard kinetic operations.

> 80%
60-79%
40-59%
20-39%
< 20%
I do not know or am unsure of the best answer

Question 13:

Given the MAGTF Information Environment Operations Concept of Employment signed in July of 2017, who is responsible for planning and executing information environment operations in the MEF CE?

Question 14:

What is your rank?

O-6
O-5
O-4
Other, please list rank

Question 15:

What is your MOS?

Question 16:

How many years of experience do you have planning and/or executing MEF level exercises or operations?

> 6 years
3-6 years
1-3 years
< 1 year

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APPENDIX E. MARINE CORPS INTERVIEW QUESTIONS

General Questions:

1.) Do you feel comfortable with me recording this interview? Note: Interview will be transcribed and the recordings will be destroyed. The transcribed interview's purpose is to generate results for this study. Your name, rank, billet, and responses will not be listed in the results of the research.

2.) What is your name and rank?

3.) What billet do you currently hold?

4.) How long have you held your current billet?

5.) What other billets have you held that have interacted with Marine Expeditionary Force (MEF) Command Element (CE) operations planning and execution? How long?

6.) What other billets have you held that have interacted with planning Information Environment Operations (IEOs)? How long?

7.) What billets have you held where you interacted in some manner with the creation of IEO doctrine and concepts?

Doctrine and Concept Questions:

1.) Can you describe the information environment?

2.) What are the functions of the information environment?

3.) Who is responsible at the Service and Marine Air Ground Task Force (MAGTF) level for the functions in the information environment?

4.) What resources/authorities do those responsible for information environment functions possess to execute those functions?

5.) What resources/authorities do those responsible for information environment functions lack to execute those functions?

6.) What is the function of the MEF Information Group (MIG)?

7.) What are the intended coordination points between the MIG and the MEF CE?

8.) What are the intended integration points between the MIG and the subordinate elements of the MAGTF? Please describe the integration points both in planning and execution.

9.) How is the MIG intended to tie-in to National-level, Combatant Command, and Service level capabilities? Where specifically are those touch points, authorizations, and requests located?

10.) Where do the MIG and the MEF CE Staff responsibilities overlap or touch?

11.) Where does natural conflict or potential conflict exist between the MIG and other members of the MEF CE Staff?

12.) How would you suggest solving these potential conflict areas?

13.) In your view, what is the best way to coordinate planning and execution of IEOs, in general, between the MIG and the G-3

14.) In your view, what is the best way to coordinate function one in the MAGTF IEO Concept of Employment (COE) between the MIG and the MEF G-6?

15.) In your view, what is the best way to coordinate function two in the MAGTF IEO COE between the MIG and the MEF G-2?

16.) In your view, what is the best way to coordinate functions three through six in the MAGTF IEO COE between the MIG and the Fires and Effects Coordination Cell (FECC)?

17.) Outside of the MIG, does anyone else share in responsibility for function seven of the MAGTF IEO COE?

18.) In your view, who specifically takes the lead during the planning phase of an operation with regards to IEO? Same question regarding the execution phase?

19.) What do you see as the support chain for IEO? (Example: Communications control hierarchy from Combatant Command to CYBERCOM support, service or joint level, to G-6 in the AO)

20.) Are there any other future concepts pending to assist the Operating Forces with understanding the IE and IEO? If so, what are they, and how will they help?

MEF Questions:

1.) At the Marine Expeditionary Force (MEF) Command Element (CE), who is currently responsible for planning Information Environment Operations (IEOs)?

2.) At the MEF CE, what other actors are involved in planning IEOs?

3.) At the MEF CE, what are the current IEO integration points (meetings, cells, boards) to plan and execute IEOs?

4.) At the MEF CE, who currently leads each of these IEO integration points?

5.) At the MEF CE, what are the frequency and duration of each of these integration points?

6.) Can you describe how many personnel come from each unit/agency to participate in these integration points?

7.) How much time does it take for each person/unit/agency to participate and prepare for these integration points compared to other duties that they must perform? (Note: Question may be asked in general or specific to a unit/agency depending on experience of the person being interviewed)

8.) How do these integration points tie into the decision-making process for the Main operational planning team (OPT) and ultimately the Commanding General?

9.) When the MEF Information Group (MIG) is full operations capable (FOC), how do you see the responsibilities for IEOs changing?

10.) When the MIG is FOC, how do you see the integrations points changing?

11.) When the MIG is FOC, where do you anticipate the MIG and the MEF CE Staff responsibilities will overlap or touch?

12.) When the MIG is FOC, where do you think natural conflict or potential conflict will exist between the MIG and other members of the MEF CE Staff?

13.) When the MIG is FOC, how would you suggest solving these potential conflict areas?

14.) When the MIG is FOC, what do you think is the best way to coordinate planning and execution of IEOs, in general, between the MIG and the G-3

15.) When the MIG is FOC, what do you think is the best way to coordinate function one in the MAGTF IEO Concept of Employment (COE) between the MIG and the MEF G-6?

16.) When the MIG is FOC, what do you think is the best way to coordinate function two in the MAGTF IEO COE between the MIG and the MEF G-2?

17.) When the MIG is FOC, what do you think is the best way to coordinate functions three through six in the MAGTF IEO COE between the MIG and the Fires and Effects Coordination Cell (FECC)?

18.) When the MIG is FOC, who else will share in responsibility for function seven of the MAGTF IEO COE?

19.) When the MIG is FOC, who should take the lead during the planning phase of an operation with regards to IEO? Same question regarding the execution phase?

20.) What concerns do you have regarding integrating the MIG into future IEOs? Do you have recommendations to mitigate those concerns?

APPENDIX F. DEFINITIONS AND REASONING FOR INPUTS INTO THE MEF CE SCENARIO OF THE ORGCON EXPERT SYSTEM

Note 1: All questions in Appendix F are pulled directly from the input section of EcoMerc (2015); see https://ecomerc.com/orgcon/.

Note 2: Italicized definitions in Appendix F are directly quoted from EcoMerc (2017); see https://orgcon.ecomerc.com/content/distant-training-course-orgcon.

***Note 3: Where specificity is possible, I use the MEF CE as the focus of analysis. This is prudent in situations where the MEF CE differs from the remainder of the Marine Corps or other units contained within the Marine Corps. When specificity is not possible, I consider the Marine Corps organization and its culture as a whole to make inferences about the MEF CE in this appendix. ***

MEF CE
Date: 4/7/2018
Time: 12:10 PM
Scenario: MEF CE - IE OPS

A. GOALS – EFFECTIVENESS AND EFFICIENCY[1]

1.) What is the goal with respect to the degree of efficiency? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *Efficiency - an organization's goal priority that contrasts with effectiveness; a focus on inputs, use of resources, and costs, especially minimizing the costs of producing goods and services.* (EcoMerc, 2017)

Rationale: I chose medium because efficiency is important to any organization, and efficiency in decision making at the tactical level produces an ability to achieve speed and tempo relative to an opponent (USMC, 1997). Efficiency in processes is crucial to obtaining a relatively faster OODA loop (USMC, 1996) than your opponent at the tactical level, which is where the MEF CE focus of analysis resides. However, this goal is not quite as important to a tactical unit as effectiveness because the MEF CE would utilize every resource it could for a decisive and

[1] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

effective victory regardless of efficiency. I also took the survey responses into account when answering this question.

Certainty Factor: Because this question is of great importance to the accuracy of the simulation, I included this question in the survey. The final certainty factor is 75%.

2.) What is the goal with respect to the degree of effectiveness? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *Effectiveness - an organization's goal priority that contrasts with efficiency; a focus on outputs, products, or services, generating revenues, or seizing leading-edge innovation in the marketplace*. (EcoMerc, 2017)

Rationale: I chose medium high because the number one goal of any military organization is to win. Accomplishing the mission is the number one priority (USMC, 2017d), which is the true measure of effectiveness. Efficiency is important and helps you get there but is not quite as important in case of war, particularly at the tactical level. There is no publication which provides an exact answer here. I also took the responses to this question from the survey into account when I answered this question.

Certainty Factor: 75% - Survey Question

B. ENVIRONMENT AND STRATEGY

1. Environment[2]

3.) Is the organizational environment simple or complex? (EcoMerc, 2015)
simple
medium simple
complex
very complex
highly complex

Definition: *Complexity is the number of variables in the environment and their interdependency. It refers to factors that can influence the operations and outcome of the organization.*

[2] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

Examples of external conditions are: market conditions for products and inputs, prices, quality requirements, financial conditions, and governmental relations, among many others.

The environment is complex when there are a lot of environmental factors to monitor.

Characterize the number of environmental factors as follows:
•*Simple - between 1–5*
•*Complex - between 6–10*
•*Highly complex - more than 10* (EcoMerc, 2017)

Rationale: I chose highly complex because *EF21* (USMC, 2014b) and the *MOC* (USMC, 2016c) describe a highly complex future operating environment to include complex terrain, technology proliferation, information as a weapon, a battle for signatures (EMS), and an increasingly contested maritime domain. This future operating environment describes a combat environment while fighting against a peer competitor.

Certainty Factor: 100%

4.) What is the level of uncertainty of the environment? (EcoMerc, 2015)
low
medium low
medium
medium high
high

Definition: *Uncertainty refers to lack of knowledge about the value of a given variable or of the magnitude of the short-term risk from the threats to your business that you have already identified. The more uncertain the environment, the more difficult it is to predict the future states of the environment. Uncertainty requires that, at least in principle, a probability measure can be specified. Uncertainty is, in most cases, related to issues that the organization has experienced previously.*
•*A high uncertainty environment is most difficult to predict*
•*A low uncertainty environment is known and predictable* (EcoMerc, 2017)

Rationale: I chose high because *MCDP 1* (USMC, 1997) describes uncertainty as a basic nature of all warfare. That tenet combined with the language in *EF21* (USMC, 2014b) and the *MOC* (USMC, 2016c) prominently characterize the uncertainty in the future operating environment as highly uncertain. We may use our sensors and collection assets to try and make sense of the battlespace, but the sensors will be highly contested against a near-peer competitor. The uncertainty rating of high has a lot to do with the chosen environment of combat operations and the chosen opponent as a peer competitor.

Certainty Factor: 100%

5.) Is the equivocality of the environment low or high? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *Equivocality means confusion and lack of understanding. Equivocality means that asking a yes/no question is not feasible. You are not certain about what questions to ask about the environment and if a question is posed, the situation is ill defined to the point where a clear answer is not forthcoming. You may not know where the problems are. When something new happens, new regulations, new technology, and so on, it relates to equivocality. You may not know where your future business is. Also, you may not know your competitors. Equivocality is related to something the organization has not experienced before. There can be high equivocality when technology is moving very fast and when ways to use the technology can move in many, but not really predictable, directions*. (EcoMerc, 2017)

Rationale: I chose high because *EF21* (USMC, 2014b) and the *MOC* (USMC, 2016c) describe a future operating environment that will inevitably leave the USMC not knowing what to expect or what questions to ask with regards to signature management, intel collection in the EMS, and in the cyber and space domains. Equivocality is understood to be high also by the nature of warfare to include likelihood of third party intervention and strategic message handling in the information age.

Certainty Factor: 100%

6.) Is the organizational environment hostile - how tough is the competition? (EcoMerc, 2015)
extreme
high
medium
medium low
low

Definition: *Hostility is a measure of how benign or malevolent the environment is. Hostile environments are characterized by precarious settings, intense competition, harsh, overwhelming business climates, and the relative lack of exploitable opportunities.*

A hostile environment implies that someone or something threatens the existence of the organization. Hostility can vary from a supporting environment to one that is predatory and out to destroy the organization. Natural causes, e.g., hurricane or flood, can be the cause of this extreme level of hostility, or it can result from the actions of others, e.g., a hostile takeover or sabotage.

•*Low competition implies a benign environment*

•*Medium competition means a regular competitive environment*
•*High competition exists in very competitive environments*
•*Extreme competition refers to a situation where the organization has to fight hard to keep its market share* (EcoMerc, 2017)

Rationale: I chose extreme because the very nature of warfare suggests that our environment will be hostile in the future as it is a competition of two wills for survival (USMC, 1997). This may change with a lower scale conflict, but a peer competitor demands an extreme marking.

Certainty Factor: 100%

2. National Culture[3]

7.) The power distance is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *Power distance is the extent to which the less powerful members of an organization within a country expect or accept that power is distributed unequally. Low power distance refers to an expectancy of equality; high power distance refers to an acceptance of inequality.*
The level of power distance influences, for instance, the requirement for centralization. E.g., a high degree of power distance fits a high degree of centralization. (EcoMerc, 2017)

Rationale: I chose medium high because a military rank structure should entail the epitome of a high power distance. However, at the MEF CE there is a certain level of leeway given to the amount of senior personnel resident. Also, there is a certain level or decentralization at the MEF CE due to military specialty and functional separation, which leads to some given deference over rank.

Certainty Factor: 75%?

8.) The level of uncertainty avoidance is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

[3] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

Definition: *If the members of a culture feel threatened by uncertainty or unknown futures and express this as a need for predictability, then the uncertainty avoidance of the culture is high. Individuals utilize short term feedback and avoid longer term forecasting. Uncertainty avoidance influences, for instance, the degree of required formalization in the organization. High levels of uncertainty avoidance must be matched by more formalization if individuals are to feel comfortable in their everyday work life*. (EcoMerc, 2017)

Rationale: I chose medium low because uncertainty avoidance is often a systemic issue related to the actual leader of an organization and the climate surrounding that organization. However, in the case of the MEF CE, personnel rotate frequently, so determining the current level of uncertainty avoidance of the leadership would be unhelpful. Instead, I defer to MCDP 1 (USMC, 1997), which directs Marines to take initiative and not to wait for the complete sight picture before making a determination. In fact, to maintain a relatively faster OODA loop than your enemy (USMC, 1996), Marines are taught to make a decision with only 80% of the information and move on.
Certainty Factor: 75%

9.) The level of masculinity is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *The masculinity/femininity dimensions also known under the name of achievement vs. relationship orientation. It mirrors the extent to which a society is dominated by so-called masculine values, such as assertiveness, achievement, money and luxury, performance and success on the job. On the other hand, feminine aspects are quality of life, well-going relationships, both, in private as in business life, and caring for others*. (EcoMerc, 2017)

Rationale: I chose medium high because of my personal experience in the Marine Corps. The Marine Corps clearly values items to include assertiveness, performance, and success over comfort, relationships, and caring. On the other hand, an effective unit embraces some level of femininity to take care of its people and build key relationships which work together to enhance the masculine concepts which are universally desired in the USMC.

Certainty Factor: 100%

10.) The level of individualism is: (EcoMerc, 2015)
high
medium to high
medium
medium low
low

Definition: *Individualism measures the ties between individuals: loose ties suggests a high degree of individualism, while a high degree of collectivism indicates that individuals are strongly integrated from birth into cohesive in-groups which gives protection in exchange for unquestioning loyalty. The degree of individualism affects, for instance, how rewards should be given. E.g., a high degree of individualism requires an incentive system based on individual achievements.* (EcoMerc, 2017)

Rationale: I chose medium low because of personal experience. While one could argue that the MEF CE should be a collective, that is not 100% true for the Marine Corps due to the rotational nature of personnel management. Although Marines assimilate quickly into groups, there is still a level of individualism present that one may not expect.

Certainty Factor: 75%

3. Strategic Exploitation and Exploration[4]

11.) Does the organization have a high or low product innovation? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *For this question, it is important to capture the proportion of new products or services that the organization puts on the market each year compared to its competitors. Computers and movies are examples of short term-lived products. Milk is an example of a long-lived product. Sometimes long-lived products are reconditioned often to give the appearance of product renewal, as for soft drinks, beer, soap, or deodorant.* (EcoMerc, 2017)

Rationale: While the methods may change occasionally, and evolve with technology, the MEF CE has a medium level of product innovation due to the nature of it job, which is to direct the other elements of the MAGTF. Although the variety of missions and the manner in which it chooses to carry out these missions may vary, the manner in which the MAGTF conducts its job is very scripted and rehearsed. There is some degree of innovation as we learn, but it is only at a medium level.

Certainty Factor: Because my original certainty factor was only 50%, I included this question in the survey. The final certainty factor is 75%.

12.) Does the organization have a high or low process innovation? (EcoMerc, 2015)
high
medium high

[4] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

medium
medium low
low

Definition: *Process innovation is related to the number and novelty of new techniques that are employed in the production of existing services and products. This variable is industry specific.*

Rationale*: I chose medium based upon my experience. The military has a low process innovation. The Marine Corps' processes are well documented, and mostly followed. On occasion, the Marine Corps has the ability to adapt processes if they are not working. On the other hand, the Marine Corps as a culture prides itself on adaptability and adopts new processes if the old ones were not working properly or fast enough*. (EcoMerc, 2017)

Certainty Factor: 100%

13.) Does the organization have a high or low concern for quality? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *Concern for quality is related to the superiority of the organization's products or services compared to those of competitors. Quality should be considered from a total quality perspective*. (EcoMerc, 2017)

Rationale: I chose medium high as a result of the survey. Whether dropping bombs or producing a message, the effects need to be quality. I would guess that the Marine Corps' volume and combined arms approach allows it to get away with a less than 100% quality effort as time comes into the equation as well.

Certainty Factor: Because my original certainty factor was only 50%, I included this question in the survey. The final certainty factor is 75%.

14.) How does the organization's price level compare to its competitors? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *The pricing situation of the organization should be measured relative to that of its competitors. For this variable it may be useful to run multiple scenarios. Compare the results to obtain an idea about competitive capacity*. (EcoMerc, 2017)

Rationale: I chose medium high because the United States military, and by extension the Marine Corps, is more technologically advanced and spends more for its people and equipment than the next six countries who spend on defense combined. There is no exact equation that would explain how that relates to what the price is at the MEF CE, but one can easily extrapolate the price to be very high, particularly when you allow for the fact that technology proliferation is allowing others to compete with the United States military at a high level without spending as much. United States military systems have not quite caught up to that paradigm as quickly as it would like. However, currently having the largest GDP in the world, it is safe to say the United States can afford to pay a higher price for the use of our capable assets at this particular point.

Certainty Factor: Because my original certainty factor was only 50%, I included this question in the survey. The final certainty factor is 75%.

15.) Does the organization operate in an industry with high or low capital requirements? (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *This question deals with the magnitude of the combined requirements to enter and/or maintain a position in the market. The answer depends partly on the magnitude of the capital needed for start-up and for operations and partly on other barriers to entry such as legal and regulatory barriers. In some industries production requires a minimum magnitude of operation due to the manufacturing process itself or because of the need for economy of scale (a brewery, a car manufacturer, or a farming operation, for examples). In others, the legal and regulatory requirements are very demanding (food processing and pharmaceuticals for examples). Additional consideration must be given the use of labor as compared with investment in fixed assets. Heavy investment in fixed assets usually implies a high level of requirement*. (EcoMerc, 2017)

Rationale: While the answer to this question would normally be high, I chose medium high because the future operating environment, combined with the proliferation of technology and social media, make it a bit easier to compete in certain aspects of warfare than it used to be. Specifically, cyber operations require little capital when compared to the requirements to complex advanced technological kinetic weapons platforms.

Certainty Factor: 100%

4. Diversity[5]

16.) Does the organization have many different products? (EcoMerc, 2015)
many
some to many
some
few to some
few

Definition: *Product diversity is one of the variables that affects the determination of the best organizational structure. This question may look simple but in fact needs careful attention. Insight is needed here regarding the complexity of the organization required to coordinate the tasks of producing and marketing products or services. Some products may at first sight look very different, but if the firm's processes to produce and/or market them are very similar they can be put in one class and counted as one.*

Categorize the number of products/services as follows:
•Many - more than 20
•Some - between 5–20
•Few - between 1–4
At question is the organizational complexity required for the line of products in the form of specialist functions such as product managers or special product or production conditions. In general, "product" should be regarded as type or line of products. If items are handled in a similar way, then the complexity is low.

Categorize products as different if: they use raw materials sold by different providers, require different machines and processes, their production is complex and requires many steps, marketing techniques are dissimilar, or sales focuses on different market segments. To sort out the diversity, you may need to conduct a sensitivity analysis. (EcoMerc, 2017)

Rationale: I chose many because just looking at Intelligence alone, there are a litany of processes that must occur and be managed by the MEF CE to collect, analyze, and disseminate intelligence. Now add in maneuver, aviation, communications, logistics, information operations, manpower management, the multiple types of targeting and fires, and the planning process. Each of these major categories requires multiple sub specialty processes that are complex and have different reporting chains and agencies to coordinate with. The nature of the Command Element is very complex and that is why you see such a wide swath of specialties present.

Certainty Factor: 100%

17.) Does the organization operate in many or few different markets? (EcoMerc, 2015)

[5] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

many
some to many
some
few to some
few

Definition: *Market diversity is one of the variables that affects the determination of the best organizational structure. The market diversity is great with a large number of markets or customer types. It is a question of what the market requires from the organization complexity in the form of specialized functions such as market manager or special supply or production conditions.*

Marketing departments typically conduct market segment analyses to get insight on how to position the organization's product or services. This question is about the number of different market segments to which the firm addresses its products, product lines, or services. A market segment is a target population or sub-population with common characteristics for marketing and sales purpose (the young, the old, or a specific income level).
•*Many characterizes more than 20 market segments*
•*Some characterizes between 5–20 market segments*
•*Few characterizes 1–4 market segments*. (EcoMerc, 2017)

Rationale: This question is hard to relate to the military. My initial inclination tells me the answer is many for the same reason the organization has many different products. Depending on the operation, we operate in multiple states, or a single sector of one, but we operate in 5 domains in several different areas of each. To be conservative, I select some to many.

Certainty Factor: 75%

18.) Does the organization operate in more than one country? If yes, is the activity level abroad greater than 25%? (EcoMerc, 2015)
yes - activity level greater than 25%
yes - activity level lower than 25%
no

Definition: *The internationalization question relates both to sales and production. An increase in internationalization increases the information and management demands. Activity refers to production, services and/or sales*. (EcoMerc, 2017)

Rationale: I chose yes, but less than 25%, because the nature of the MEF CE requires it to assume the role as an intermediary between a geographic combatant command or deployed joint task force, and many relationships, functions, and agencies that are required for reach back at the states. Also, the MEF CE's logistics chain and information chain more than likely span multiple countries along the way to sustain the force. However, this part of the force spans less than 25% of the MEF CE.

Certainty Factor: 75%

19.) Does the organization have many different products in the foreign market? (EcoMerc, 2015)
many
some
few
none

Definition: *Foreign product diversity is one of the variables that affects the determination of the best organizational structure. An increase in foreign product diversity increases information and management demands. The international divisional product structure requires the organization to have few products or product groups. For many products, a multidimensional global configuration is more likely to be recommended.*

Categorize the number of products/services as follows:
•*Many - more than 20*
•*Some - between 5–20*
•*Few - between 1–4* (EcoMerc, 2017)

Rationale: I chose few due to experience. The MEF CE forward deploys with its normal contingency of products. They are not considered foreign in this aspect. However, to adapt to individual environment, the MEF CE may have to create a few, or at least adapt a few products based upon the foreign area of operations.

Certainty Factor: 75%

C. STRUCTURE

1. Current Configuration[6]

20.) What is the organization's current organizational configuration? (EcoMerc, 2015)
simple
functional
divisional
matrix
adhocracy
other

Definition: *The different types of configuration describe the general principles for dividing work, breaking tasks into subtasks, and coordinating activities.*
A flat hierarchy and a singular head for control and decision-making characterize the simple configuration. A simple organization is flat and devoid of complexity; usually a general manager

[6] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

supervises one level of employees. Decision making, coordination, and control are usually done by the top manager. This configuration is often chosen by small owner-run companies in their early stages.

The functional configuration has more levels and more horizontal specialization than a simple configuration. There is a well-defined departmental structure with employees organized into departments, each with a specific function (administration, human resources, finances, production, manufacturing, marketing, sales...). The names of the departments are usually descriptive of their function and fit with the activities of the organization. A simple organization often evolves into a functional organization when it grows. The functional organization may exhibit more or less complexity depending on the level of formalization of the departments.
In a more complex functional organization, there is a differentiation between staff and line personnel.

A divisional organization is composed of sub-units centered on groupings of products, markets, and/or customers. The sub-units of the divisional organization are often called divisions and are relatively autonomous compared to those of the functional organization. The different divisions are coordinated by headquarters. The divisions themselves can have any configuration, but very commonly they have a functional configuration. This type of organization is more complex and frequently occurs in organizations with multiple product lines. In some cases, the divisions are identical units, as in bank branches, or in retail chains. The key here is to assess the level of interdependence between the units to differentiate a divisional organization from a complex functional organization.

The matrix configuration introduces a dual hierarchy; it incorporates the essential functional and divisional configurations in an organization simultaneously. The matrix assigns specialists from functional departments to work on one or more interdisciplinary teams that are led by project leaders. Permanent product/project teams are also possible. In sum, the matrix organization combines simultaneously the characteristics of a functional and a divisional organization. In a two-dimensional matrix, for instance, a dual hierarchy manages the same activity by function and by project. A three-dimensional matrix of product, function, and country is common in multinational organizations. The matrix configuration is applied to a functional configuration when the coordination requirements are so high that the regular functional configuration is ineffective and the interdependencies between products/projects are so numerous that a divisional configuration is not an efficient configuration. The goal is to obtain functional specialization and efficiency as well as project focus to realize an end objective effectively.
In some organizations there is no hierarchy at all. In an ad-hocracy, a group of people who are experts in their own domains come together for a project. The goal of the organization is to complete the project. They create an ad-hoc configuration with low vertical differentiation (they are all experts) and low formalization (they meet and decide what to do). Decentralization, flexibility, and responsiveness are essential characteristics.

There are large numbers of hybrid configurations and new ones emerge from time to time. These blend the characteristics of classic configurations. If your organization configuration does not fit any of the other organizational configurations use this category. (EcoMerc, 2017)

Rationale: I chose matrix due to experience and an analysis of organizational design theory. The MIG specifically makes information functions part of a matrix organization. There is certainly a dual reporting chain now. Also, the standard staff configuration versus the B2C2WGs configuration also exemplifies the need for a matrix organization.

Certainty Factor: 100%

21.) Is the current organizational configuration a bureaucracy? (EcoMerc, 2015)
no answer / undetermined
machine bureaucracy
professional bureaucracy
not a bureaucracy

Definition: *For an organization to be a bureaucracy, it must be characterized by:*
•Division of labor
•Well-defined authority hierarchy
•High formalization
•Impersonal in nature
•Employment based on merits
•Career tracks for employees
•Distinct separation of members' organizational and personal lives

A bureaucracy is a special type of functional organization that is characterized by high formalization, a well-defined hierarchy, and extensive training of personnel who function by following written rules. A bureaucracy has highly routine operating tasks and very formalized rules and regulations. Tasks are grouped into functional departments, often with centralized authority. Decision making follows the chain of command, and an elaborate administrative structure with sharp distinction between line and staff is often made. The functional organization structure is hierarchical, complex, and elaborate. One of the primary characteristic is the adherence to rules.
In the professional bureaucracy, highly skilled professionals perform very complex tasks according to strict standards. Some of the standardization is achieved via the professionalization, giving the professionals some decision authority, but they comply with complex professional standards. Other characteristics are high complexity, decentralization, and internal professional standards, e.g., codes of conduct or legislation. Examples would be medical clinics, law firms, or accounting partnerships. (EcoMerc, 2017)

Rationale: I chose professional bureaucracy because every military organization is a bureaucracy. However, the MEF CE is closer to a professional bureaucracy due to the high level of the many different specialties required to coordinate the entirety of the MEF.

Certainty Factor: 100%

22.) <u>What is your organizations degree of IT-infusion?</u> (EcoMerc, 2015)
very high
high
medium
low
very low

<u>Definition</u>: *IT infusion refers to the extent to which a firm relies on information technology-based systems, including data processing and computer-based communication systems, to manage knowledge exchange. Although nearly all organizations today rely on IT to acquire and transfer knowledge, some firms rely more heavily on IT-based systems for knowledge exchange, whereas others rely more heavily on face-to-face or manual systems to support knowledge exchange.*

To answer the question, you may think about the following:
*a.To what extent does the organization rely on computer-based systems to manage its most critical business activities (1) - (5)? __4_*
b.To what extent does the organization invest in continual improvement of business processes (1) - (5)? _3__
c.Which tends to be more frequently used to manage interpersonal communication, face-to-face contact between people (1), or electronic communication systems (5)? _4__
d.Do systems of communication in the organization tend to be informal and changing (1) or more formalized and prescribed (5)? _4__

We suggest that you use an averaging procedure of the detailed scores to get to the overall score, but you may make an overall estimate of the score if you prefer.
An average score of 1 means very low while an average score of 5 means very high. (EcoMerc, 2017)

<u>Rationale</u>: I chose high because the MEF CE is required to manage all aspects of the MAGTF and relies heavily IT programs to include on email, SharePoint, VTC, chat to manage all of the various functions that are required in the organization.

Certainty Factor: 75%

23.) <u>What is your organization's degree of virtualization</u>? (EcoMerc, 2015)
very high
high
medium
low
very low

<u>Definition</u>: *Virtualization refers to the degree of boundary-spanning or organization reach that a company uses as the basis for knowledge exchange. Organizations that are high in virtualization look outward, linking teams, business units, or even the firm itself with parties*

outside of the organizational boundary in order to gain knowledge. Organizations that are low in virtualization take a more inward focus, gaining knowledge by developing it inside corporate boundaries, inside specialized groups, or by acquiring knowledge externally and then harboring it inside the firm. (EcoMerc, 2017)

Rationale: I chose medium because although the MEF CE has a very capable intelligence and knowledge apparatus built into the unit and its subordinate units, its level of reach back capability is impressive and required to fight in the complex terrain that they will find themselves in in the future (USMC, 2016c). Further, high headquarters and adjacent units are also feeders of information that out networks allow us to tap into. Therefore, the answer falls in the middle, thus medium.

Certainty Factor: 75%

24.) What is the current configuration's degree of internationalization? (EcoMerc, 2015)
multi domestic
global
international
transnational
not an international configuration

Definition: *The factors influencing the type of international configuration are:*
•Configurations of assets and capabilities
•Role of overseas operations
•Development and diffusion of knowledge

Multinational-A multinational structure for international configuration is characterized by the following:
• Assets and capabilities are decentralized and nationally self-sufficient
• The role of overseas departments is to sense and exploit local/national opportunities
• Knowledge is developed and retained within each unit

Global-A global structure for international configuration is characterized by the following:
•Assets and capabilities are centralized and globally scaled
•The role of overseas operations is to implement strategies decided by the parent company
•Knowledge is developed and retained at the center
•Resembles a functional configuration
International-An international structure for international configuration is characterized by the following:
•Sources of core competences are centralized, while others are decentralized
•The role of overseas departments is to adapt and leverage competencies held by the parent company
•Knowledge is developed at the center and then transferred to overseas operations

Transnational-A transnational design is not a type of configuration - it is often associated with a matrix structure, but in principle it is applicable to any type of structure. A transnational design is more a question of culture and attitude, and is characterized by the following:
•Assets and capabilities are dispersed, interdependent, and specialized
•Overseas operations are differentiated (national) units that are all integrated into world-wide operations
•Knowledge is developed jointly and shared world-wide (EcoMerc, 2017)

Rationale: I chose transnational because it fits the definition. The MEF CE is one part of a global apparatus that is integrated into the sum of the U.S. Defense and National Policy objectives.

Certainty Factor: 100%

25.) What is the organizations degree of local responsiveness? (EcoMerc, 2015)
very high
high
medium
low
very low

Definition: *Local responsiveness refers to the decision to distribute work in many locales versus consolidating work in one or a few centralized locations. Distributing work to many locales maximizes your firm's flexibility to complete work tasks any time, any place. A highly distributed workforce, perhaps consisting of an army of mobile salespersons, software programmers, or service operators, exemplifies this extreme. These workers may be organized by country or region if the firm is very large; but the key is that the locally responsive firm tries to distribute work as much as possible, thus enabling close contact with customers or suppliers and the ability to anticipate and respond to their needs. Consolidation of operations reduces local responsiveness, although it brings economies of scale, the opportunity to standardize work practices, and a general increase in managerial control over the work.*

To answer the question you may think about the following:
a.To what extent are the units of your firm located close to corporate headquarters (1) or far from corporate headquarters (5)? _2__
b.To what extent does your firm consolidate work in one region of the world (1) or does it distribute its work to many locales (5)? _2__
c.To what extent are the important business decisions in your organization made with a corporate perspective in mind (1) versus a local perspective (5)? _2__
d.Overall, is the firm organized to assure centralization of decision making and consistency of work practices across subunits (1) or autonomy of local units and customization to meet local needs (5)? _3__

We suggest that you use an averaging procedure of the detailed scores to get to the overall score, but you may make an overall estimate of the score if you prefer.
An average score of 1 means very low while an average score of 5 means very high. (EcoMerc, 2017)

Rationale: I chose low because the MEF CE exists to integrate all units and actions within the MAGTF into a cohesive team (USMC, 2017d). Although some autonomy is offered, low ends up being the right score here.

Certainty Factor: 75%

26.) What is your organizations degree of optimal sourcing? (EcoMerc, 2015)
very high
high
medium
low
very low

Definition: *Optimal sourcing refers to the decision to locate operations in the place in the world that brings the greatest advantage to the firm in terms of customer contact, cost efficiency, human resource skill need, or another objective. For example, a software company may choose to locate in the Silicon Valley of the U.S. or Sophia Antipolis on the Cote d'Azur of France in order to be close to programmers and engineers with needed technical skills for new product development. Alternatively, if the firm seeks low cost, high skilled labor, it may locate one or more facilities in Hyderabad or New Delhi. In order to reach customers in developing markets of Russia, the company may locate offices in Novgorod, Kursk, or Vladivostok. If a firm locates work based on placing it as close as possible to the resource supply as possible, then the firm is placing high value on optimal sourcing. Alternatively, if a firm locates work based on other factors, such as being conveniently close to headquarters or in a particular city, country or geographic region where the company has existing business or operations, then optimal sourcing is low.*

To answer question about optimal sourcing you may think about the following:

To what extent does your firm make decisions about where to locate its operations based on the following criteria:
a.close proximity to customers (1) - (5)? _5__
b.close proximity to human resources, whether skilled or unskilled (1) - (5)? _3__
c.close proximity to suppliers (1) - (5)? _2__
d.close proximity to business partners (1) - (5)? _4__
e.close proximity to resources to its ongoing business (1) - (5)? _4__

We suggest that you use an averaging procedure of the detailed scores to get to the overall score, but you may make an overall estimate of the score if you prefer.

An average score of 1 means very low while an average score of 5 means very high. (EcoMerc, 2017)

Rationale: I chose high because I completed the scenario in the definition and scored 18/25. This score splits the decision between high and medium, but high seems more correct. The MEF CE is a tactical unit and thus places itself close to the fight. However, it does not place itself so close to the fight that it cannot still maintain the fight through the allocation of resources informed by an overall picture of the problem.

Certainty Factor: 75%

2. Current Complexity[7]

Definition: *Organizational complexity indicates the degree of horizontal, vertical, and spatial differentiation. As organizational complexity increases, so does the difficulty of coordinating activities and the requirement for information processing.*

Key measures are the number of hierarchical levels, the number of locations of operation, and the skill level of employees at each level.
•Horizontal differentiation relates to the specialization within an organization
•Vertical differentiation relates to the number of hierarchical levels in an organization
•Spatial differentiation relates to the geographic dispersion of activities within the organization
(EcoMerc, 2017)

27.) How many different job titles are there? (EcoMerc, 2015)
very few
small number
moderate number
large number
great number

Rationale: I chose great number because there are more than 4000 members of the MEF CE that spans hundreds of different military occupational specialties and 4–5 times as many job descriptions.

Certainty Factor: 100%
28.) What proportion of employees hold advanced degrees or have many years of specialized training? (EcoMerc, 2015)
0 to 10 %
11 to 20 %
21 to 50 %
51 to 75 %

[7] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

76 to 100 %

Rationale: This question is difficult to answer because it does not match one-for-one with the idea of a Master's Degree or PhD. Instead, however, there are more than 200 members of the MEF CE staff, and probably another 10% of the MIG that would be considered very senior and required to make the many different specialties run. I'm referring to field grade, general officer, and chief warrant officers, as well as very senior SNCOs

Certainty Factor: 75%

29.) How many vertical levels separate the chief executive from those employees working at the bottom of the organization? (EcoMerc, 2015)
1 or 2
3 to 5
6 to 8
9 to 12
more than 12

Rationale: The 3-star General is separated by 9–12 levels from a general intelligence specialist in the Intel Battalion as an example.

Certainty Factor: 100%

30.) What is the average number of vertical levels for the organization? (EcoMerc, 2015)
1 or 2
3 to 5
6 to 8
9 to 12
more than 12

Rationale: I chose 6 to 8 because a lot more of the organization exists on the lower levels than in executive positions. This reality is easy to ascertain by viewing the tables of organization for a MEF CE.

Certainty Factor: 75%

31.) Including the main center, how many geographic locations are there where organization members are employed? (EcoMerc, 2015)
1 or 2
3 to 5
6 to 15
16 to 30
more than 30

Rationale: I chose 3 to 5 based on experience. There are several points or nodes away from the main area required for a MEF CE to operate. Most of these are required for intelligence, logistics, or communications purposes.

Certainty Factor: 75%

32.) What is the average distance of these outlying units from the organization's main center? (EcoMerc, 2015)
less than 10 miles
11 to 100 miles
101 to 500 miles
501 to 3500 miles
more than 3500 miles
one site

Rationale: This answer definitely depends upon the location of the conflict. However, I assume based upon the current 2 + 3 alignment of the National Defense Strategy (Mattis, 2018), that the correct answer is 501 to 3500 miles. This answer includes reach back nodes and several distribution points along the route. Of course, one or more will be much closer, but the average will be over 500 miles.

Certainty Factor: 75%

33.) What proportion of the organization's total work force is located at these outlying units? (EcoMerc, 2015)
less than 10 %
11 to 25 %
26 to 60 %
61 to 90 %
more than 90 %
one site

Rationale: Most of the outlying locations only have small liaisons from the MEF CE. The answer is significantly smaller than 10%.

Certainty Factor: 100%

3. Geography[8]

34.) <u>To what extent are the units of your firm located close to corporate headquarters or far from corporate headquarters?</u> (EcoMerc, 2015)
very close
close
neither close nor far away
far away
very far away

<u>Rationale</u>: I chose close because the vast majority of the units in the MEF CE operate near the MEF CE or with one of its subcomponents, which are usually located in the same geographic area.

Certainty Factor: 75%
35.) <u>To what extent does your firm consolidate work in one region of the world or does it distribute its work to many locales?</u> (EcoMerc, 2015)
consolidate work in one region of the world
medium consolidation of work in one region of the world
both consolidation and distribution
medium distribution of the work to many locales
distribution of the work to many locales

<u>Rationale</u>: I chose medium consolidation of work in one region of the world because the majority of work performed by the MEF CE is located in the same region of the world.

Certainty Factor: 75%

4. Knowledge

36.) <u>What is the overall volume of data that the organization must collect, process, and store on a regular basis?</u> (EcoMerc, 2015)
very high
high
medium
low
very low

<u>Definition</u>: *Amount of information is the overall volume of data that an organization must collect, process, and store on a regular basis. To some extent, this dimension is a function of firm*

[8] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

size; larger organizations tend to have greater information processing demands. But amount of information is more closely related to the kind of work that a firm does, and to the design of work tasks, than to organizational size. If tasks are repetitive and executed hundreds or thousands of times throughout the day (such as in a large retail chain or a bank), then the information processing demands are huge. Here we would say that the amount of information that must be processed is high. On the other hand, if tasks are one-time tasks and there are relatively few and may be general, fragmented or knotty, that is, there is variety in how tasks are done, and then the amount of information to be processed is lower. (EcoMerc, 2017)

Rationale: I chose high because while the MEF CE does not process as much data as Google or Amazon or even the NSA, the amount of information about friendly, enemy, end environmental impacts is continually collected, processed, refined, and used to inform decisions. This process continues ad nauseam.

Certainty Factor: 75%

37.) What is the tacit nature of the information that the organization must collect, process, and store on a regular basis? (EcoMerc, 2015)
very high
high
medium
low
very low

Definition: *Tacit knowledge is characterized by causal ambiguity and difficulty of codification. Tacit information is not readily articulated as a set of facts or rules and so is difficult to transfer. This is in contrast to explicit knowledge, which can be expressed formally as a system of symbols and facts, and therefore more readily communicated. Of course, all organizations must process both tacit and explicit knowledge. The question is which type is more critical to the everyday functioning of the organization; that is, which is more important to executing tasks and getting work done. If exchange of high amounts of tacit information is critical to an organization's everyday work, then its approach to information systems design will be more people or relationship-based rather than event or data-based.*

In answering this question think about the kind of knowledge that is most critical to your organization's success in doing its everyday work. Rate your answer to each question using the scale from very little (1) or to a great extent (5).
a.To what extent is the vital knowledge of the firm codifiable (1) or non codifiable (5), in the sense that it does not lend itself to being explicitly captured, processed and stored? 3
b.Could most of the important information that is exchanged within the firm be readily recorded on paper or in a computer system (1=yes, 5=no)? 2
c.Does the information exchanged within the organization require interpretation in order to be meaningful (1=not much interpretation required, 5=high interpretation required)? 5

d. Is information relatively easy to understand and explain (1), or are there subtleties to understanding the information, requiring specialized experience or expertise to fully "make sense" of the information (5)? 4

We suggest that you use an averaging procedure of the detailed scores to get to the overall score, but you may make an overall estimate of the score if you prefer.
An average score of 1 means very low while an average score of 5 means very high. (EcoMerc, 2017)

Rationale: I chose high because the scenario in the definition led to aa score of 3.5 out of 5. I rounded up due to the nature of the environment.

Certainty Factor: 75%

D. PROCESS AND PEOPLE

1. Technology[9]

38.) What is the major activity of the organization? (EcoMerc, 2015)
production
service
retail
wholesale

Definition: *The type of business influences the organizational structure. There are differences between a service organization and a production organization. Thus, identifying the topology of a business puts the organization in a technology set.*

A production firm is a firm whose primary activity is the conversion of raw materials, parts and sub-assemblies into finished products for use by a customer. The manufacturing transformation requires equipment and personnel. It may be either capital or labor intensive. Firms that make automobiles, toys, and computers are examples. The distinction between a manufactured product and a service product is not always obvious. However, the distinction between a manufacturer and a service firm is more apparent. Most manufactured products ultimately provide a service, and some services involve a product.

A service firm is a firm whose primary activity is the delivery of a service directly to a customer or client. In the final stages, individuals usually deliver the service. Banking is a service that usually involves direct face-to-face delivery, but automatic teller machines (ATMs) are an exception. Service requires both capital and labor. Many services are labor intensive, but others

[9] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

are not: telecommunications services, for example, are very capital intensive. Service firms include restaurants, telecommunications, banking, accounting, health care, and dry cleaning. The distinction between a manufactured product and a service product is not always obvious. However, the distinction between a manufacturer and a service firm is more apparent. Most manufactured products ultimately provide a service, and some services involve a product.

A retail firm is a firm whose primary activity is the sale of a product or service directly to a customer who is the final user. Usually, retailers do not engage in the manufacturing of products. Kroger, Bilka, WalMart, and Carrefour are examples.

A wholesale firm is a firm whose primary activity is the sale of a product or service to another firm and that does not sell directly to the final user. Wholesalers do not engage in the manufacturing of products. Wholesalers are less well known to the consumer. Many famous brand name companies such as Coca Cola sell only to wholesalers. (EcoMerc, 2017)

Rationale: Although this question is difficult because the terminology does not easily translate from business to military, I chose service. While a MEF CE can certainly act as a wholesale firm during low intensity conflict, that is not the norm. The MEF CE is also most certainly not a production firm. Therefore, the only choices remaining are service and retail. The MEF CE has three customers: its subordinate units who rely on it for coordination, deconfliction, and control; its higher and adjacent units; and the enemy. In each case, a service firm is the most closely related.

Certainty Factor: 75%

39.) What kind of technology does the organization have? (EcoMerc, 2015)
a mass production
a process production
a unit production

Definition: *The key to this question is the intensity of labor associated with company activities. Labor intensive means that the products or services have a high labor content. Choose standardized high volume/mass production if the activity is labor intensive and involves a small number of repetitive tasks performed by laborers with low to medium skills. Assembly lines often fall into this category as well as large retailing outlets. Choose highly automated/process production if the activity involves mass production using machines to accomplish tasks that may be more complex than the previous option, and if labor skills needed are higher than for the previous option. In this category, the labor skills need to be higher either because the production process is complex or it necessitates the skills to operate intricate machines and/or robots. Food processing and other cooking processes fall within this category. Some car production assembly lines may fall in this category, especially if robots are used. Finally, choose specialized product/unit production if the activity is customized, unique, and involves a high degree of craftsmanship. In this case, steps are not standardized and/or the final product is highly personalized. Typical for this category are the production of high fashion garments and sit-down*

restaurants (not fast food); in the service category, consulting firms may fit here. (EcoMerc, 2017)

Rationale: While the answer is clearly not a mass production, the other two are harder to distinguish. On the one hand, the planning process and battle rhythm at the MEF CE to include the communication system, intelligence system, and fires system involve a great deal of step-by-step process-oriented actions. The answer is usually a combination of those various processes in a more artful instance. Therefore, I defer to the main work of the organization, which is repetitive and automated in function, thus a process production.

Certainty Factor: Because my original certainty factor was only 50%, I included this question in the survey. The final certainty factor is 75%.

40.) Does the organization have a routine technology? (EcoMerc, 2015)
no
low to medium
some
yes
high to medium

Definition: *Does the work process allow for routines to be developed and is the organization doing things the way it always has done? Sometimes routines are written down almost like cooking recipes. Fast food restaurants are a typical example; the production of pharmaceutical and cosmetic products is another.*

Routine technology is associated with easy-to-analyze problems and few exceptions. Non-routine technology is associated with difficult-to-resolve problems and many exceptions. (EcoMerc, 2017)

Rationale: I chose low to medium because although there is some routineness of processes, the job of a MEF CE is to navigate a difficult-to-resolve problem.

Certainty Factor: 75%

41.) Is the technology divisible? (EcoMerc, 2015)
highly
medium highly
somewhat
medium little
little

Definition: *Divisibility is the degree to which tasks can be divided into smaller, relatively independent tasks*. (EcoMerc, 2017)

Rationale: I chose medium little because most processes in the MEF CE depend on one another. For instance, a communication system is employed in a very divisible manner, yet it requires a high level of information and intelligence to determine the manner of its employment (this constantly changes). Therefore, the MEF CE system is interdependent in most aspects. Coordination is very important in all different fields.

Certainty Factor: 100%

42.) Does the organization have a strong or weak dominant technology? (EcoMerc, 2015)
weak
average
strong

Definition: *In general, the majority of organizations will fall within the average category. If a company has a routine for production but does not have a routine for sales it cannot be considered to have a dominant technology. If the organization is strong in research and development it most likely does not have a dominant technology (example: a University falls in the Weak category). Finally, hamburger fast-food chains have a strong dominant technology* (EcoMerc, 2017)

Rationale: I chose average because there is no specific dominant technology, rather many useful ones, at the MEF CE.

Certainty Factor: 75%

43.) Does the organization use or plan to use an advanced information system? (EcoMerc, 2015)
yes
no

Definition: *An advanced electronic information system is composed of the following elements:*
•Email
•Company intranet
•Access to the internet
•High degree of organizational records kept electronically
•An advanced MIS (most companies have a Management Information System (MIS), but not necessarily an Advanced MIS. In an advanced MIS the data is only entered once in the system and may be used in different forms for various company functions)
•Extensive use of database transactions

An advanced electronic information system speeds up communication between members of the organization. It allows top management to process more information quickly and makes possible a more complex organization with more detailed management involvement. If the organization has 50% or more of the elements listed above, it has an advanced electronic information system. (EcoMerc, 2017)

Rationale: I chose yes because the MEF CE utilizes email, SharePoint, Shared Drives, chat services, web services, and a COP to facilitate faster communications between disparate elements within the organization.

Certainty Factor: 100%

2. Organizational Climate[10]

44.) The level of trust - sharing, openness, confidence - is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *An organization has a high level of trust when the individuals are open, sharing and truthful, and individuals place their confidence in others. An organization has a low level of trust when the individuals are closed, guarded, unsharing, untruthful and create an atmosphere of anxiety and insecurity*. (EcoMerc, 2017)

Rationale: I chose medium high due to experience. The only reason I did not choose high level of confidence stems from different levels of security classifications.

Certainty Factor: 75%

45.) The level of conflict - disagreement, friction - in this organization is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *An organization has a **high level** of conflict when there is a strong opposition of forces, goals and beliefs. This is experienced as friction and disagreement among the individuals. An organization has a **low level** of conflict when there is harmony in goals and beliefs. This results in a spirit of cooperation among the individuals*. (EcoMerc, 2017)

Rationale: I chose medium low because although the goal is to have low conflict, certain functions require the same resources and thus create necessary friction. This friction is not the norm, but due to the matrix structure, it is unavoidable.

Certainty Factor: 75%

[10] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

46.) <u>The employee morale - confidence, enthusiasm - in this organization is:</u> (EcoMerc, 2015)
high
medium high
medium
medium low
low

<u>Definition</u>: *An organization has a high level of employee morale when the individuals are confident and enthusiastic about the organization and have Esprit de Corps. An organization has a low level of employee morale when the individuals lack confidence and enthusiasm about the organization and lack a sense of purpose and confidence about the future*. (EcoMerc, 2017)

<u>Rationale</u>: I chose high because I was considering a Marine Corps unit whose members are deploying together in harm's way.

Certainty Factor: 75%

47.) <u>Rewards are given in an equitable fashion:</u> (EcoMerc, 2015)
highly equitable
medium to highly equitable
moderately equitable
medium to inequitably
inequitably

<u>Definition</u>: *Reward equity is difficult to measure, since salary increases, bonuses and rewards are often privately discussed between employee and supervisor. The presence of systems or guidelines for rewards is an indicator of equitable distribution of rewards within an organization.* (EcoMerc, 2017)

<u>Rationale</u>: I chose medium to highly equitable because promotions and rewards are widely publicized organization wide in a Marine Corps unit. However, the human element of favoritism cannot be completely removed, or at least the perception of it, from any organization.

Certainty Factor: 100%

48.) <u>The organization's resistance to change is:</u> (EcoMerc, 2015)
high
medium high
medium
medium low
low

<u>Definition</u>: *Past history regarding adaptation to changing conditions (in the industry and regarding technology) is a good indicator for the answer to this question. An organization has a*

high resistance *to change when individuals believe the inertia is high, and presume and desire that "we will do things tomorrow as we did them today." An organization has a* ***low resistance*** *to change when individuals embrace change as the normal circumstance and relish that "tomorrow will be different."* (EcoMerc, 2017)

Rationale: This question is difficult to answer because the Marine Corps prides itself on adaptation and change. Remaining adaptable is a proven method for success in the Marine Corps. However, some of the most senior personnel in the Marine Corps (at least the Operating Forces) compose the MEF CE, and a natural inclination to stifle change exists amongst this group. Therefore, the answer must lie in-between.

Certainty Factor: 75%

49.) The leadership credibility - respect, inspiration, acceptance - is: (EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *The leader credibility is* ***high*** *when individuals have belief in their leadership; there is a sense of respect, inspiration and acceptance of decisions and actions. The leader credibility is* ***low*** *when the individuals lack respect and do not accept the legitimacy of authority*. (EcoMerc, 2017)

Rationale: Again, I was tempted to measure the current state of affairs, but that would ultimately be unhelpful. Instead, institutional norm and precedence were used to answer this question medium high. Most Marine Corps units possess credible and inspiring leaders who are accepted by the Marines. Although, the case of the good leader is not the rule because there are a few bad apples everywhere. However, the age and experience of the MEF CE staff lend it to a resistance to instant acceptance, which keeps the answer out of the high level.

Certainty Factor: 75%

50.) The level of scapegoating - shifting of responsibility for actions which fail - is:
(EcoMerc, 2015)
high
medium high
medium
medium low
low

Definition: *An organization has a high level of scapegoating when individuals believe that the responsibility for failed actions will be shifted to others such as top management, staff,*

employees, or outsiders. An organization has a low level of scapegoating when individuals believe that responsibility for failed actions is not shifted to others. (EcoMerc, 2017)

Rationale: I chose medium low because in the military, particularly in the Marine Corps, the average is low to medium low. I chose the more conservative answer.

Certainty Factor: 75%

3. Leadership Style[11]

51.) With respect to centralization/decentralization. What kind of decisions does the top management prefer to make? (EcoMerc, 2015)
policy and general decisions
policy and some general decisions
general and some operating decisions
general and operating decisions
operating decisions

Definition: *It is important to remember that top management relates to the focus of analysis defined earlier. If you are unsure about how to answer this question you may seek a statement of preference from the management concerned, conduct an analysis of its behavior, or discuss the issue with others who have observed the management in action. To analyze behavior, you may wish to identify the last ten decisions made by the top management, categorize each decision, and look at the distribution of decision types*. (EcoMerc, 2017)

Rationale: It would be useless to attempt to gage the current Command General's (CG) preferences. Instead, I examined where a MEF Commander typically utilizes his time, which is on general decision-making. Occasionally, the MEF CG will make operating decisions, as in the Marine Corps the CG is always a part of the planning process (USMC, 2016d), but his planners and staff make the majority of them, leaving the truly important ones to the CG. This reasoning led me to select general and some operating decisions.

Certainty Factor: 75%

52.) Does the management prefer to make long-term decisions or short-term decisions? (EcoMerc, 2015)
long-term decisions
long-term and some short-term decisions
long-term and short-term decisions
short-time and some long-term decisions
short-time decisions

[11] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

Long term means a year or more and concerns idea and visions type issues
Short term means less than a year, and concerns routine operational decisions
Personnel decisions and activities between units are usually short-term decisions.
(EcoMerc, 2017)

Rationale: I chose long-term with some short-term decisions because the MEF CG is mostly focused on the campaign or operation. He/she will dip into the tactical when warranted but has subordinate commanders and a staff to handle these shorter-term decisions.

Certainty Factor: 75%

53.) Does top management prefer to use very detailed or very aggregate information when making decisions? (EcoMerc, 2015)
very detailed information
detailed information
medium detailed information
aggregate information
very aggregate information

Definition:
*A preference for **detailed information** indicates a high preference for micro-involvement*
*A preference for **aggregate information** indicates a lower preference for micro-involvement*
Aggregate information refers to statistics, ratios, summary reports, etc.
One behavior that may give a good indication is the way the top manager looks at budgets and expenses. (EcoMerc, 2017)

Rationale: I chose aggregate information because the MEF CG does not get into how a report is generated unless he/she feels the conclusion is wrong and need exists to personally investigate further.

Certainty Factor: 75%

54.) Are management proactive or reactive on taking action? (EcoMerc, 2015)
proactive/anticipating future events
medium proactive/anticipating future events
some proactive and some reactive
medium reactive to events as they occur
reactive to events as they occur

Definition: *To be proactive means to act in anticipation of what may happen, and to be reactive is to act based on events that have occurred.*
*A preference for **reactive decision-making** indicates a higher preference for micro-involvement*
*A preference for **proactive decision-making** indicates a lower preference for micro-involvement* (EcoMerc, 2017)

Rationale: I chose medium proactive/anticipating future events due to Marine Corps doctrine. In warfare, some reactive decision making is required, however, a MEF CG would tend to spend more of his time making proactive decisions. Marine Corps doctrine teaches that forecasting is crucial to this process with the ability to adjust based upon inputs and outputs (USMC, 1997, 2017d).

Certainty Factor: 75%

55.) What is top management's attitude towards risk? (EcoMerc, 2015)
risk propensity
medium risk propensity
risk neutral
medium risk averse
risk averse

Definition: *To be risk neutral is to have a 50/50 chance to win one dollar when bidding one dollar. Risk behavior can be observed when defining new products or markets, or when applying for a loan. The same individual can exhibit different risk behavior in various situations. Usually individuals tend to be more risk adverse in their personal life than in their professional life. Also, individuals tend to be more risk adverse on the upside (win big when on a winning streak) than on the down side (win big when loosing). Often, if an individual fails to meet his/her objectives, there is a tendency to become more of a risk taker to compensate for losses and possibly mistakes.*
☐ ***Risk propensity*** *indicates a lower preference for micro-involvement*
☐ ***Risk aversion*** *indicates a high preference for micro-involvement* (EcoMerc, 2017)

Rationale: I chose medium risk propensity because Marine Corps doctrine implores its leaders to take risks (USMC, 1997). However, these leaders are not foolhardy and will not take needless or excessive risk that could endanger lives foolishly.

Certainty Factor: 100%

56.) What kind of motivation and control does top management prefer? (EcoMerc, 2015)
motivation through inspiration
motivation through inspiration and some control
a combination of motivation and control
control techniques and some motivation
using control techniques
No answer

Definition: *This question deals with the techniques used by top management to control mid-level management and to reward it. The analysis of supervision, reward, and compensation systems of the organization will provide the information needed here. Motivation and inspiration can be associated with incentive and bonus systems. In this case, the answer is combination of motivation and control.*

☐ *A preference for **motivation** indicates a lower preference for micro-involvement*
☐ *A preference for **control** indicates a high preference for micro-involvement* (EcoMerc, 2017)

Rationale: I chose motivation through inspiration and some control. Although this question is easily dependent on the individual leader, I felt comfortable selecting this answer because this is the typical type of leader that rises to positions of power in the Marine Corps.

Certainty Factor: 75%

E. SIZE AND AGE[12]

1. Size

57.) How many employees does the organization have? (EcoMerc, 2015)

Answer: more than 4000

Definition: *Size is one of the variables that influences the choice of organizational structure. The best indicator of organization size is the total number of employees who work full, part time, or under contract. Size is used as a measure of the required information processing capacity. Larger organizations require greater information processing capacity than smaller organizations*. (EcoMerc, 2017)

Rationale: I chose more than 4,000 after reviewing MEF CE tables of organization.

Certainty Factor: 100%

2. Age/Ownership

Definition: *Age is one of the variables that influences the choice of organizational structure. This relates to the life cycle of organizational development. Organizations that change strategy or top management may even become "younger" as they start over in a new cycle. Age and ownership place restrictions on the choice of recommended structure. When an organization is being designed, its history and particular ownership context have to be taken into account. As an example, consider the relationship between age and recommended structure. A young organization is likely to have a simple structure; an older organization is more likely to have a structure other than simple, such as functional or divisional*.

Measures are:

•*The age of the organization*
• *The kind of ownership structure* (EcoMerc, 2017)

[12] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

58.) How old is the organization? (EcoMerc, 2015)
young
mature
old

Definition: *To assess the maturity of the organization, the age is determined by the time elapsed since the last major shock to the organization.*

Examples of shocks include:
- *New top management*
- *Major change in employees' structure*
- *Merger*
- *Spin-off or divestment*
- *New major changes in products or services*
- *Introduction of a widespread new technology*

Young means less than three years; Mature means from 3 to 10 years; Old means more than ten years. Age partly determines how formalized the organization is likely to be. For example, an organization may have been created a very long time ago and may have many systems in place, but when new people arrive it takes them a while to understand the internal systems and know all the rules. In a new organization, when no rules exist, it takes the managers a while to understand what new rules are needed. (EcoMerc, 2017)

Rationale: I chose young. Although mature would typically be the correct answer here, it is incorrect. Although a MEF has been around for decades, the rotational nature of personnel means that few people have been in the organization for over three years. The CG himself is only part of the organization for two years. Also, the MIG just formed last year, which should change the organization quite a bit, shifting it more towards a young organization.

Certainty Factor: 75%

59.) What kind of ownership does the organization have? (EcoMerc, 2015)
private/controlled by owner
incorporated/controlled by board
public sector/controlled by bureaucracy
subsidiary/tied to other units

Definition: *The point of this question is to help determine the degree of control over decisions by the management. The kind of ownership influences the choice of organizational structure.* (EcoMerc, 2017)

Rationale: The MEF CE is a government organization and a bureaucracy.

Certainty Factor: 100%

F. COORDINATION AND CONTROL

1. Current Centralization[13]

60.) <u>How much direct involvement does top management have in gathering the information they use in making decisions?</u> (EcoMerc, 2015)
none
little
some
a great deal
a very great deal

<u>Definition</u>: *Centralization (of control) is a means of coordinating corporate activities. It is measured by the degree of top management involvement in the gathering of information and the execution of decisions.*

Centralization is related to who makes certain types of decisions. This includes establishing the budget, exercising control over evaluations and rewards, and being involved in hiring and firing. Empowerment of individuals usually means greater decentralization, i.e., decision making at lower levels in the organization. If only one person is responsible for decision-making, the degree of centralization is high.

Centralization is categorized by degrees ranging from highly centralized to highly decentralized. Measures of centralization are:

•Management's involvement in information gathering
•Management participation in the interpretation of information
•Management control with the execution of decisions
•Discretion over budgets
•Discretion over evaluations
•Middle management discretion over hiring and firing
•Discretion over personnel rewards
•Discretion over purchasing
•Middle management discretion over projects
•Management discretion over work exceptions

By way of comparison, formalization is a means of coordinating corporate activities using rules. It is measured by the degree of use of rules and the manner in which exceptions are handled. No number of rules can include all possible contingencies. (EcoMerc, 2017)

[13] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

Rationale: I chose some because the staff generally puts the information together for a commander to make a decision. However, a General is often engaged at some level in gathering his/her own information as well.

Certainty Factor: 75%

61.) To what degree does top management participate in the interpretation of the information input? (EcoMerc, 2015)
less than 20 %
21 to 40 %
41 to 60 %
61 to 80 %
more than 80 %

Rationale: I chose 41–60% because the MEF CG has a staff to assist here but, as the person with the most experience in the MEF, the CG will be personally involved with at least half of the interpretations or at least directive enough to the staff to influence the interpretations.
Certainty Factor: 75%

62.) To what degree does the top management directly control the execution of decisions? (EcoMerc, 2015)
0 to 20 %
21 to 40 %
41 to 60 %
61 to 80 %
more than 80 %

Rationale: I chose 0 to 20% because the CG will supervise but not control the execution of his decisions with few exceptions.

Certainty Factor: 100%

63.) How much discretion does the typical middle manager have in establishing his or her budget? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose some because the middle managers manage their own budgets, but the middle managers actions are at the discretion of the CG as priorities change. All budgets are related and while priorities change, it is a zero-sum game, so middle managers cannot have full control.

Certainty Factor: 75%

64.) How much discretion does the typical middle manager have in determining how his or her unit will be evaluated? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose some because the middle manager or subordinate has discretion if they cannot meet a regulation or complete a task, but the senior person in a military organization typically influences the middle managers' evaluations by regulation.

Certainty Factor: 75%

65.) How much discretion does the typical middle manager have in hiring and firing personnel? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose little because firing personnel in the Marine Corps is extremely difficult and time-consuming unless you are a Commanding Officer, and even then, the process takes time.

Certainty Factor: 100%

66.) How much discretion does the typical middle manager have over personnel rewards - (i.e., salary increases and promotions)? (EcoMerc, 2015)
very great
great
some
little
none

Rationale: I chose some because fitness report and personnel award systems give middle managers some latitude, but they are not the final approvers of either tool.

Certainty Factor: 100%

67.) How much discretion does the typical middle manager have over purchasing equipment and supplies? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose some because as long as middle managers have the prescribed budget, they are free to spend their money within the law. There are high regulations on government employees for purchasing services and products, but as long as those rules are followed, the middle manager has discretion. However, those managers' funds can be adjusted by higher headquarters at any time due to reprioritization.

Certainty Factor: 100%

68.) How much discretion does the typical middle manager have over establishing a new project or program? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose some because new projects are something that require coordination with higher leadership in the Marine Corps, and those projects must certainly be nested within the CG's intent or the campaign plan. However, that would not stop anyone per se as long as they follow posted guidelines.

Certainty Factor: 75%

69.) How much discretion does the typical middle manager have over how work exceptions are to be handled? (EcoMerc, 2015)
very high
high
some
little
none

Rationale: I chose some because managers can typically control some exceptions on the spot, and the chain of command is agile for those exceptions they cannot. However, middle managers are given discretion, particularly at the MEF CE because each section is full of duty experts. Since the environment is complex, coordination is often required before a middle manager makes a recalculation due to an exception.

Certainty Factor: 100%

2. Current Formalization[14]

Definition: *Formalization characterizes the degree to which jobs and procedures within the organization are standardized, rule-based, and in writing. Formalization is leads to standardized behavior and is therefore a means to obtain coordination and control in the organization. Formalization represents the rules in the organization and may vary across parts of the organization. Further, formalization varies according to the cultural environment and is industry specific. Formalization must not be confused with standardized behavior per se. Rules may not be set by the organization, but by a professional association. This professionalization leads to standardization because professionals may act in a standardized way due to their training.*
Social norms and group pressure may also lead to standardized behavior, and the organization may or may not be able to control these norms.

Measures for formalization are:
•*Extent of written job descriptions*
•*Degree of supervision*
•*Compliance with job standards*
•*Number of written instructions*
•*Compliance with written instructions*
•*Freedom from rules*
•*Number of rules* (EcoMerc, 2017)

70.) Written job descriptions are available for? (EcoMerc, 2015)
none
opera. employees or top management
opera. employ. & first-line supervisors
opera. employees, lower and middle mgmt
all employees, excl. senior management
all employees, including senior management

Rationale: I chose all employees, including senior management because written job descriptions are customary in a military organization due to the rotational nature of the force. Those descriptions are also required by regulation.

Certainty Factor: 100%

[14] Questions are pulled directly from EcoMerc (2015). Italicized definitions are quoted directly from EcoMerc (2017).

71.) Where written job descriptions exist, how closely are employees supervised to ensure compliance with standards set in the job description? (EcoMerc, 2015)
very loosely
loosely
moderately closely
closely
very closely

Rationale: I chose moderately closely because the fitness report system governs this question and depends on each individual reporting senior to adhere to the regulation. However, the system is not meant to be completely prescriptive, but more generalized.

Certainty Factor: 75%

72.) How much latitude are employees allowed from the standards? (EcoMerc, 2015)
a great deal
large amount
a moderate amount
very little
none

Rationale: I chose very little because the focus of analysis is a military organization where standards are crucial to good order and discipline.

Certainty Factor: 100%

73.) What percentage of non-managerial employees are given written operating instructions or procedures for their job? (EcoMerc, 2015)
0 to 20 %
21 to 40 %
41 to 60 %
61 to 80 %
81 to 100 %

Rationale: I chose 0 to 20% because the line workers in a MEF CE are specialists in their field. Those workers receive training, and sometimes have the resources from that training to fall back on, but they are not tied to certain procedures in the performance of their primary duties, except to follow general regulations and guidelines such as classification standards.

Certainty Factor: 75%

74.) <u>Of those managerial employees given written instructions or procedures to what extent are they followed?</u> (EcoMerc, 2015)
none
little
some
a great deal
a very great deal
no written instructions

<u>Rationale</u>: I chose no written instructions because although everyone in the Marine Corps receives a billet description, it is extremely rare for a top leader to receive written procedures or instructions for accomplishing his/her mission.

Certainty Factor: 75%

75.) <u>To what extent are supervisors and middle managers free from rules procedures, and policies when they make decisions?</u> (EcoMerc, 2015)
very frequently
frequently
some
little
none

<u>Rationale</u>: I chose some because supervisors and middle managers are often called upon to negotiate where rules do not exist or cannot be applied to a specific situation. The need to make dynamic decisions is why the higher ups in the Marine Corps are called leaders as opposed to managers. However, the bureaucracy tries to cover most rules and procedures.

Certainty Factor: 75%

76.) <u>What percentage of all the rules and procedures that exist within the organization is in writing?</u> (EcoMerc, 2015)
less than 20 %
21 to 40 %
41 to 60 %
61 to 80 %
more than 80 %

<u>Rationale</u>: I chose more than 80% because the military bureaucracy attempts to make guidelines, rules, or regulations for everything. When those guidelines are made, they are written down and widely disseminated.

Certainty Factor: 100%

3. Current Incentives

77.) <u>What is the basis for designing incentives?</u> (EcoMerc, 2015)
Individual behavior
Individual results
Group based behavior
Group based results
No principles

<u>Rationale</u>: I chose group-based results because awards and fitness reports come down to individual merit, but they are also a result of the group's performance. Even when an individual is strong, the unit cannot make the mission without the group, which is ultimately upon what Marines are judged.

Certainty Factor: Because my original certainty factor was only 50%, I included this question in the survey. The final certainty factor is 75%.

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APPENDIX G. MARINE CORPS SURVEY STATISTICS

***Note 1: Questions 2-8 are adapted or copied from:
EcoMerc. (2015). Organizational consultant (ORGCON) (Version 9.1) [computer software]. Retrieved from https://ecomerc.com/orgcon/***

***Note 2: Definitions are adapted or copied from:
EcoMerc (2017). Distance training course for ORGCON. Retrieved October 10, 2017, from https://orgcon.ecomerc.com/content/distant-training-course-orgcon***

Number of records in this query:	54
Total records in survey:	54
Percentage of total:	100.00%

Field summary for q1
Naval Postgraduate School Consent to Participate in Research Introduction. You are invited to participate in a research study entitled …. Do you agree to participate in this research?

Answer	Count	Percentage
Yes (Y)	54	100.00%
No (N)	0	0.00%
No answer	0	0.00%

Field summary for q2

In organizational design theory, efficiency is defined as “an organization’s goal priority that contrasts with effectiveness” (EcoMerc, 2017). “Efficiency is a focus on inputs, use of resources, and costs, especially minimizing the costs of results or outcomes” (EcoMerc, 2017). Based on your experience, to what level would you categorize the MEF CE’s goals with respect to efficiency (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
High (A1)	3	5.56%	6.25%
Medium high (A2)	11	20.37%	22.92%
Medium (A3)	18	33.33%	37.50%
Medium low (A4)	12	22.22%	25.00%
Low (A5)	4	7.41%	8.33%
I do not know or am unsure of the best answer (A6)	6	11.11%	
No answer	0	0.00%	

Field summary for q3

In organizational design theory, effectiveness is defined as “an organization’s goal priority that contrasts with efficiency” (EcoMerc, 2017). “Effectiveness is a focus on outputs, products, or services, or producing the desired effect in the intended battlespace” (EcoMerc, 2017). Based on your experience, to what level would you categorize the MEF CE’s goals with respect to effectiveness (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
High (A1)	8	14.81%	16.30%
Medium high (A2)	26	48.15%	53.06%
Medium (A3)	10	18.52%	20.41%
Medium low (A4)	4	7.41%	8.16%
Low (A5)	1	1.85%	2.04%
I do not know or am unsure of the best answer (A6)	5	9.26%	
No answer	0	0.00%	

Field summary for q4

Think of the MEF CE's product as integration and coordination mechanisms for the different elements of the MAGTF and/or the MEF CE's effects in the battlespace (EcoMerc, 2017). How would you categorize the MEF CE's ability to attain product innovation (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
High (1)	0	0.00%	0.00%
Medium high (2)	3	5.56%	6.00%
Medium (3)	22	40.74%	44.00%
Medium low (4)	13	24.07%	26.00%
Low (5)	12	22.22%	24.00%
I do not know or am unsure of the best answer (6)	4	7.41%	
No answer	0	0.00%	

Field summary for q5

"Concern for quality is related to the superiority of the" MEF CE's outputs or effects in the battlespace compared to those of its adversaries (EcoMerc, 2017). How would you categorize the MEF CE's concern for quality (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
High (1)	11	20.37%	21.57%
Medium high (2)	17	31.48%	33.33%
Medium (3)	16	29.63%	31.37%
Medium low (4)	7	12.96%	13.73%
Low (5)	0	0.00%	0.00%
I do not know or am unsure of the best answer (6)	3	5.56%	
No answer	0	0.00%	

Field summary for q6

How does the MEF CE's price level (how much it spends on its products or effects) compare to a peer adversary (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
Much higher (1)	9	16.67%	25.00%
Higher (2)	21	38.89%	58.33%
Same or equal (3)	4	7.41%	11.11%
Lower (4)	1	1.85%	2.78%
Much lower (5)	1	1.85%	2.78%
I do not know or am unsure of the best answer (6)	18	33.33%	
No answer	0	0.00%	

Field summary for q7

In organizational design theory, task design is defined as decomposing work into subtasks while considering the coordination among the subtasks to meet organizational goals. What kind of task design does the MEF CE have (EcoMerc, 2015)?
mass production – "labor intensive and involves a small number of repetitive tasks performed by laborers with low to medium skills" (EcoMerc, 2017).
process production - uses mass production to accomplish "more complex" tasks "than the previous option" (EcoMerc, 2017), which requires higher labor skills in the workforce (EcoMerc, 2017).
unit production – "the activity is customized, unique, and involves a high degree of craftsmanship. Steps are not standardized and/or the final product is highly personalized" (EcoMerc, 2017).

Answer	Count	Percentage	Percentage Where Respondent Answered
a mass production (1)	15	27.78%	31.25%
a process production (2)	23	42.59%	47.92%
a unit production (3)	10	18.52%	20.83%
I do not know or am unsure of the best answer (4)	6	11.11%	
No answer	0	0.00%	

Field summary for q8

What is the basis for designing incentives at the MEF CE (EcoMerc, 2015)?

Answer	Count	Percentage	Percentage Where Respondent Answered
Individual behavior (1)	4	7.41%	9.76%
Individual results (2)	10	18.52%	24.39%
Group based behavior (3)	9	16.67%	21.95%
Group based results (4)	18	33.33%	43.90%
I do not know or am unsure of the best answer (5)	13	24.07%	
No answer	0	0.00%	

Field summary for q9

In general, what are the training and education levels of Officers responsible for information environment operations compared to the same rank of Officers serving in primary military occupational specialties (MOS) at the MEF CE?

Answer	Count	Percentage	Percentage Where Respondent Answered
Greatly above the average (1)	1	1.85%	2.27%
Above average (2)	6	11.11%	13.64%
Same or equal (3)	14	25.93%	31.82%
Below average (4)	15	27.78%	34.09%
Greatly below the average (5)	8	14.81%	18.18%
I do not know or am unsure of the best answer (6)	10	18.52%	
No answer	0	0.00%	

Field summary for q10

In general, how do career opportunities of Officers in information environment operations positions compare to the same rank personnel serving in primary military occupational specialties (MOS) at the MEF CE?

Answer	Count	Percentage	Percentage Where Respondent Answered
Greatly above the average (1)	0	0.00%	0.00%
Above average (2)	1	1.85%	2.63%
Same or equal (3)	9	16.67%	23.68%
Below average (4)	15	27.78%	**39.47%**
Greatly below the average (5)	13	24.07%	34.21%
I do not know or am unsure of the best answer (6)	16	29.63%	
No answer	0	0.00%	

Field summary for q11

On average, how many tours do Officers serving in information environment operations billets at the MEF CE spend in the information environment operations field during a career?

Answer	Count	Percentage	Percentage Where Respondent Answered
4 or more (1)	1	1.85%	3.49%
3 (2)	1	1.85%	3.49%
2 (3)	8	14.81%	27.59%
1 (4)	19	35.19%	65.52%
I do not know or am unsure of the best answer (5)	25	46.30%	
No answer	0	0.00%	

Field summary for q12

What percentage of time does the MEF CE staff spend on information environment operations during most planning operations or exercises?

Answer	Count	Percentage	Percentage Where Respondent Answered
> 80% (1)	1	1.85%	2.33%
60-79% (2)	1	1.85%	2.33%
40-59% (3)	2	3.70%	4.65%
20-39% (4)	11	20.37%	25.58%
< 20% (5)	28	51.85%	65.17%
I do not know or am unsure of the best answer (6)	11	20.37%	
No answer	0	0.00%	

Field summary for q13

Given the MAGTF Information Environment Operations Concept of Employment signed in July of 2017, who is responsible for planning and executing information environment operations in the MEF CE?

Response
Should be the MEF G3
The MEF Information Group COC or Information Warfare Coordination Center.
IEO are planned through various operations sections (G3, FECC, future ops, current ops, etc.) The MIGS will eventually take the lead in planning and executing IEO once they have a trained staff to do so.
Operations Officer with assistance from the MIG CoC
MIG
MEF G-3 (FECC) ICW the MIG COC
The MIG
The MIG.
The MIG
MIG and G-3 in coordination with relevant staff sections.
IO Officer
It would seem the MIG is responsible for planning with execution distributed across the MAGTF.
Planning and planning integration is a MEF staff responsibility. Execution will be a MIG function.
I am unaware of who is responsible.

Not sure
I am not sure.
FECC
FECC
Ultimately, the CG is responsible for conducting IO. It's a MAGTF function that is supported by the entire staff, usually led by the IO officer.
The commander is responsible, but delegates much of the work to a MOS-specific officer to help with design and implementation.
FECC
The MEF G-3 / G-35 / FECC. This is of course opinion, as the MAGTF IEO COE states that primacy of IE is the MIG.
The G-3
The MIG staff assists the MEF staff in planning IE Ops. To an extent, most members of the MEF CE execute some piece of IE Ops, but the MIG COC directly monitors execution of IE Ops.
The MEF CG, delegated to the G-3/G-5, but the G-2, G-6, and MIG will play heavy roles as well.
Planning and executing information environment operations is not formally defined or assigned to a particular staff lead.
MEF FECC
Information operations command
I've not read the document, but assume it is intel Battalion.
MIG Commander
According to the pub: ...there is no organization or C2 mechanism focused on holistically planning and conducting IE Ops.
The responsibility and authority for IE Ops ultimately rests with the commander. However, just as all commanders rely on subordinate commanders and staff to carry out the mission, so too will the MEF commander rely on subordinate commanders and staff to plan and conduct integrated IE Ops. The MIG commander is the MEF commanding general's primary subordinate commander delegated the authority to plan, execute, and/or coordinate integrated IE Ops across the MEF's AOI. (Concept Document page 4) This is no different the ACE for air and the LCE for log. What is missing is a discussion of the MIG supporting the MEF commander's scheme of maneuver in the same manner as the other elements of the MAGTF. There also should be a discussion of MAIN vs, SUPPORTING efforts. There may be a time in phase 0-2 (pre-conflict) where the MIG is the supported element. Moving into the conflict stages, the MIG is likely to be in support of the GCE or ACE.

Shared and synchronized activity across the MEF G staff.
Ultimately the MEF CG. But this appears to have been delegated to the MIG CO or IWCC for coordination. Unsure how this is going to integrate with functions already established such as the IOC, FECC, and MCCC.
From the I MEF perspective, the Commanding General... with the assistance of his MEF CE staff for planning (specifically the FECC), MSCs for execution (enabled by future MIG IE Ops-trained Marines), and the future MIG COC for battle tracking.
The planning is done by the MEF CE staff, the execution is conducted by the MIG and its subordinates.
The OpsO. OpsO is responsible for everything.
If there is not a dedicated information operations team then it generally falls to the G6.
Technically, one could say that the MEF CG is ultimately responsible for everything within his command. However, if there is one General Staff Section which receives the CG's delegation for these tasks, it is the G-3 with support from the G-2.
G35
The MEF staff as a whole, with input from the MIG and its subordinate units.
No idea
The MEF Information Group (MIG)
The MAGTF IE Ops COE is a concept and not doctrine, therefore is not proscriptive. This MEF has found the preponderance of planning is in the G-2, G-3, G-3 FECC, COMMSTRAT, and G-6. These same sections also contribute to execution, while most execution takes place at the MIG, its subordinate battalions, and the MSCs.
At I MEF, the FECC is responsible for planning IEO (in addition to the G5 and G35, who incorporate IEO into their plans and future ops, respectively); ultimately, the MIG will be responsible for execution. Today, IEO execution is spread among G33 watch officers, Intel Operations Center personnel, the MEF Command and Control Center, and a few others.
I do not know
The MAGTF IE Ops COE is deficient in the role and responsibility of the MEF staff. Ultimately the MEF Commander is responsible and the COE states the MIG Commander is responsible for planning, integrating, executing IE Ops across the MEF staff.

Field summary for q14

What is your rank?

Answer	Count	Percentage
O-6 (1)	1	1.85%
O-5 (2)	6	11.11%
O-4 (3)	39	72.22%
Other, please list rank (4)	8	14.81%
Comments	8	14.81%
No answer	0	0.00%

Field summary for q15

What is your MOS?

Response
when on AD, 0302, infantry officer
7315
8834
0202/0550
5803
0402
6602
0202
0602
0202
7523
0202
7202
0602
0302/8248
7557
0102
7588
1802
0202
0202
0307 Ground Recon Officer
4502
0202

1302
0302
0402
0602
3002
1802
1302
0402
2602
0402
8834
NA
0602
0202
0602
5803, 8834, 0550, 0510 (pending 8016)
4591
0302
0402
0802
0201
0602
6002
0370
0802
0202

Field summary for q16

How many years of experience do you have planning and/or executing MEF level exercises or operations?

Answer	Count	Percentage
> 6 years (1)	7	12.96%
3-6 years (2)	12	22.22%
1-3 years (3)	25	46.30%
< 1 year (4)	10	18.52%
No answer	0	0.00%

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APPENDIX H. FULL ORGCON OUTPUT REPORT FOR THE MEF CE SCENARIO

Note: Appendix H is a copy of the output report from the MEF CE Scenario taken from: EcoMerc. (2015). Organizational consultant (ORGCON) (Version 9.1) [computer software]. Retrieved from https://ecomerc.com/orgcon/

MEF CE
Date: 4/7/2018
Time: 12:10 PM
Scenario: MEF CE - IE OPS

Strategic Misfits
A Strategic misfit is an unbalanced situation among the contingency factors of management style, size, environment, technology, climate, and strategy.

- MEF CE has a group climate. This does not fit well with the very unpredictable environment. A group climate has a high resistance to change. You should think of ways to change the climate to a developmental climate where there is an external orientation, rather than the internal focus of the group. One approach is to take up an external challenge or create an outside competitor. Of course, this takes management attention for some time. To change the environment is likely to be even more difficult but worthy of analysis. Can you reduce the uncertainty in the environment through advertising, contracting, joint ventures or other means to make some aspects of the environment less uncertain? That is, change the environment.
- MEF CE has a group climate. This may be a mismatch with an analyzer with innovation strategy! A group climate has high resistance to change. An analyzer with innovation strategy is committed to some changes. One approach is to morph the group climate into a developmental climate by changing the focus to developing innovative products. Make innovation the focus where there is challenge and opportunity. There is likely to be resistance which requires managerial attention to make the change. Of course, you may also back away from innovation to accommodate the group climate. This may work in the short term, but is risky for the longer term.
- MEF CE has a non-routine technology, but the workforce has a low level of education and training. This situation can create production and service difficulties which usually require an investment in the education and training. A non-routine technology usually requires that individuals adapt work methods to the particular task at hand. Individuals must have a sufficiently high level of skill to make these adaptations. Low levels of education and training do better at routine tasks and technologies. With a non-routine technology and low level of education and training, new training will be required for the workforce. This training should emphasize individual responsibility and decision making for the

quality of the product or service. E.g., it should provide new skills which permit the individual to take the initiative for action which meets the customers' requirements.

Contingency Misfits

A contingency misfit is an unbalanced situation among the contingency factors of management style, size, environment, technology, climate, and strategy and the organization structure.

- The group climate is too calm with too little aspiration for change to fit a relationship driven knowledge exchange structure.
- The required focus on delegation and risk taking of a leader suggest that the geographical distribution should not be international.

The Size

The size of the organization - large, medium, or small - is based upon the number of employees, adjusted for their level of education or technical skills.

- Based on the answers you provided, it is most likely that your organization's size is large (cf 100%)
- Less than 20% of the people employed by MEF CE have a high level of education. No adjustments for educational level are made. The adjusted number of employees is greater than 2,000 and MEF CE is categorized as large.

The Climate

The organizational climate effect is the summary measure of people and behavior.

- Based on the answers you provided, it is most likely that the organizational climate is a group climate (cf 74%)
- The group climate is characterized as a friendly place to work where people share a lot of themselves. It is like an extended family. The leaders, or head of the organization, are considered to be mentors and, perhaps even parent figures. The organization is held together by loyalty or tradition. Commitment is high. The organization emphasizes the long-term benefit of human resource development with high cohesion and morale being important. Success is defined in terms of sensitivity to customers and concern for people. The organization places a premium on teamwork, participation, and consensus. When the organization has a medium to high level of trust it is likely that the organization has a group climate. An organization with medium to a low level of conflict can be categorized to have group climate. Employees with a medium to high morale is one element of group climate. Medium to highly equitable rewards in the organization drives the climate towards a group climate. Medium to high resistance to change is one of the significant properties of a group climate. Medium to high leader credibility characterizes an organization with a group climate. An organization with a medium to low level of scapegoating may have a group climate.

The Leadership Style

The leadership style of the management is categorized as either a leader, producer, maestro, or manager. This categorization is based upon the management's preference for delegation, detail in decision making, risk profile, time perspective proactivity, and motivation.

- Based on the answers you provided, it is most likely that your leadership style is a leader type (cf 42%)
- It could also be that your leadership style is a maestro type (cf 42%)
- A leader is characterized as an individual who has a high preference for delegation and a low level of uncertainty avoidance. Management has a long-term horizon when making decisions, which characterizes a leadership style of the leader type. Since the management has a preference for making decisions on the basis of very aggregate information a leader characterization of the leadership style is appropriate. Management has a preference for taking risks. This is one of the characteristics of a manager with a leadership style as a leader. The management of MEF CE has a medium preference for delegating decisions and are thus letting some decisions be made by other managers. This will lead toward a leadership style of the leader type.
- A maestro is characterized as an individual who has a low preference for delegation and low uncertainty avoidance. Management has a long-term horizon when making decisions, which characterizes a leadership style of the maestro type. Since the management has a preference for making decisions on the basis of very aggregate information a maestro characterization of the leadership style is appropriate. Management has a preference for taking risks. This is one of the characteristics of a manager with a leadership style as a maestro. The management of MEF CE has a medium preference for delegating decisions and are thus letting some decisions be made by other managers. This will lead toward a maestro leadership style.

The Strategy

The organization's strategy is categorized as one of either prospector, analyzer with innovation, analyzer without innovation, defender, or reactor. These categories follow Miles and Snow's typology. Based on your answers, the organization has been assigned to a strategy category. This is a statement of the current strategy; it is not an analysis of what is the best or preferred strategy for the organization.

- Based on the answers you provided, it is most likely that your organization's strategy is an analyzer with innovation strategy (cf 72%)
- It could also be: an analyzer without innovation strategy (cf 70%)
- It could also be: a prospector strategy (cf 66%)
- An organization with an analyzer with innovation strategy is an organization that combines the strategy of the defender and the prospector. It moves into the production of a new product or enters a new market after viability has been shown. But in contrast to an analyzer without innovation, it has innovations that run concurrently with the regular production. It has a dual technology core. With many products as MEF CE, the firm can maintain its diversity by developing new

products, which is also consistent with an analyzer with innovation strategy. An organization with a high capital investment is likely to have some capabilities rather fixed, but it may also be able to adjust. The analyzer with innovation which seeks new opportunities but also maintains its profitable position is appropriate. High prices require attention to efficiency. An analyzer with innovation strategy where MEF CE both attends to existing profitable markets and seeks selective new opportunities is appropriate. With a concern for high quality an analyzer with innovation strategy is a likely strategy for MEF CE.

- An organization with an analyzer without innovation strategy is an organization whose goal is to move into new products or new markets only after their viability has been shown yet maintains an emphasis on its ongoing products. It has limited innovation related to the production process; generally, an analyzer without innovation does not have product innovation. MEF CE has many products. An analyzer without innovation strategy is appropriate to search the environment for new opportunities in order to maintain a reasonable level of product diversity. With a concern for high quality an analyzer without innovation strategy is a likely strategy for MEF CE. The medium requirement for process innovation fits the analyzer without innovation strategy.
- An organization with a prospector strategy is an organization that continually searches for market opportunities and regularly experiments with potential responses to emerging environmental trends. Thus, the organization is often the creator of change and uncertainty to which its competitors must respond. However, because of its strong concern for product and market innovation, a prospector usually is not completely efficient. When the degree of product innovation is medium the strategy is likely a prospector strategy. MEF CE has numerous products. A prospector is constantly seeking new product opportunities to serve the existing and potentially new customers. A non-routine technology is likely to be costly for MEF CE, and a prospector strategy of new product development where margins are likely to be high is very reasonable. With relatively high prices, MEF CE is likely to attract competition and imitation. A prospector strategy of constant development is necessary. With relatively high prices, MEF CE is likely to attract competition and imitation. A prospector strategy of constant development is necessary. With a concern for high quality a prospector strategy is a likely strategy for MEF CE. A medium degree of process innovation is a characteristic of a prospector strategy as it focuses on quick new developments

The Current Organizational Characteristics

Based on your answers to the questions given in the input section, the organization's current structure has been estimated. Later in this report, there will be recommendations for the optimal structure given the described organizational situation.

- The current configuration is a matrix configuration (cf 100%)
- The current geographical distribution is characterized as international (cf 60%)
- The current organizational complexity is medium (cf 85%)
- The current horizontal differentiation is medium (cf 100%)

- The current vertical differentiation is medium (cf 100%)
- The current spatial differentiation is medium (cf 100%)
- The current centralization is medium (cf 85%)
- The current formalization is medium (cf 85%)
- The current state of knowledge exchange is characterized as not determined (cf 100%)
- The current information system is characterized as relationship driven (cf 60%)

OrgCon® Recommendations

Based on your answers about the organization, its situation, and the conclusions with the greatest certainty factor from the analyses above OrgCon ® has derived recommendations for the organization's configuration, complexity, formalization, and centralization. There are also recommendations for coordination and control, the appropriate media richness for communications, and incentives. More detailed recommendations for possible changes in the current organization are also provided.

Organizational Configurations

- The most likely configuration that best fits the situation has been estimated to be a simple configuration (cf 70%)
- It could also be: a matrix configuration (cf 69%)
- It could also be: a divisional configuration (cf 66%)
- It is certainly not: a professional bureaucracy configuration (cf -37%)
- It is certainly not: a functional configuration (cf -37%)
- It is certainly not: a machine bureaucracy configuration (cf -100%)
- A simple organization has a flat hierarchy and a singular head for control and decision making. The primary reason for recommending a simple configuration is that the organization has extreme environmental hostility. Extreme environmental hostility requires that the organization can respond consistently and rapid to unforeseen challenges. Therefore, it must have a simple configuration.
- A matrix structure is a structure that assigns specialists from functional departments to work on one or more interdisciplinary teams that are led by project leaders. Permanent product teams are also possible. A dual hierarchy manages the same activities and individuals at the same time. When management has a leadership style as a leader the configuration can be a matrix. When MEF CE has many products or markets, a matrix configuration is a likely configuration. When MEF CE's environment has neither low equivocality nor low complexity, the configuration should be matrix. When MEF CE is large, the configuration can be a matrix configuration. When MEF CE has analyzer with innovation strategy, the configuration can be a matrix configuration. An organization with a group climate could have a matrix configuration.
- A divisional organization is an organization with self-contained unit grouping into relatively autonomous units coordinated by a headquarters, (product, customer, or geographical grouping). When the management has a leadership style as a leader, the configuration can be a divisional configuration. When the organization is large, the configuration can be a divisional configuration. Because the

organization has many products, the configuration should be divisional. When MEF CE's strategy is analyzer with innovation, configuration could be a divisional configuration. Because of the low foreign product/service diversity and the low international involvement of MEF CE, the configuration should be an international division configuration. Because the technology is not divisible, the configuration cannot be divisional.

- A professional bureaucracy has highly skilled professionals, high complexity, decentralization, and internal professional standards. Because the organization does not have a routine technology; it is not likely that a professional bureaucracy is an efficient organization.
- A functional organization is an organization with unit grouping by functional specialization (production, marketing, etc.). Because of the low foreign product and service diversity and the low foreign involvement of MEF CE, the configuration of MEF CE should be an international functional configuration. The configuration cannot be a functional configuration when the technology is nonroutine.
- When the organization has a nonroutine technology, it is not likely that a machine bureaucracy is an efficient organization. When the organization is confronted with hostility, it cannot be a machine bureaucracy. A machine bureaucracy cannot act appropriately when unexpected events occur.

Organizational Characteristics

- The recommended degree of organizational complexity is high (cf 81%)
- It, too, could be: low (cf 74%)
- MEF CE has an analyzer with innovation strategy which leads towards a high organizational complexity. Since the size of MEF CE is large and MEF CE has a nonroutine technology, the complexity could be high - particularly the vertical differentiation. When MEF CE has a process production technology the organizational complexity should be high. Because MEF CE has an advanced information system, organizational complexity can be greater than it could otherwise.
- MEF CE has a nonroutine technology, which implies that the organizational complexity should be low. Not much is known about the environment since both the environmental uncertainty and the environmental equivocality of MEF CE are high. In this situation, the organizational complexity should be low. This allows the organization to adapt quickly. When the environmental hostility of MEF CE is high, organizational complexity should be low. A group climate in the organization requires a low level of complexity with a low level of vertical differentiation. An organization with a low to medium low degree of individualism should have a high degree of complexity especially with respect to horizontal differentiation.
- The recommended degree of horizontal differentiation is low (cf 74%)
- The recommended degree of vertical differentiation is low (cf 77%)
- The recommended degree of formalization is low (cf 77%)

- Organizations with a nonroutine technology should have low formalization. Since the set of variables in the environment that will be important is not known and since it is not possible to predict what will happen, no efficient rules and procedures can be developed, which implies that MEF CE's formalization should be low. When environmental hostility is high formalization should be low. When the uncertainty avoidance of the organization is medium low, the employees will expect a relatively low degree of formalization. A low degree of formalization can be allowed if top management has a leadership style as a leader. When the organization is in the service industry and it does not have a routine technology, its formalization should be lower than if it had been in the manufacturing industry. A group climate in the organization requires a low level of formalization.
- The recommended degree of centralization is high (cf 38%)
- When the environment is extremely hostile, top management must take prompt action and centralization must be high. When the power distance of the organization is medium high, a relatively high centralization can be accepted by the employees. Because MEF CE has an advanced information system, centralization can be greater than it could otherwise.
- The recommended state of knowledge exchange for the organization is characterized as ad hoc communications (cf 20%)
- It could also be: cellular (cf 20%)
- When the organization has a group climate the knowledge exchange should be organized as ad hoc communications. The group climate is a pleasant place with low tension, but with low tolerance for change. The ad hoc knowledge exchange builds upon the low tension with informal information sharing among the individuals as a primary means of communications.
- When the management style of top management is a leader type, the knowledge exchange should be organized as cellular. The leader delegates freely and has a high tolerance for uncertainty with a limited need to know what is going on in detail. The cellular knowledge exchange system is a good match with its multiple self-governing small units which can adjust quickly and support the several local units. Yet, it can respond to the leader on an intermittent basis.
- The recommended information system should be event driven (cf 20%)
- It could also be: people driven (cf 20%)
- When the organization has a group climate the information system should be organized as an event driven system. The group climate is a pleasant place with low tension, but with low tolerance for change. The event-based information system builds upon the low tension with informal information sharing among the individuals as a information is needed.
- When the management style of top management is a leader type, the information system should be people driven. The leader delegates freely and has a high tolerance for uncertainty with a limited need to know what is going on in detail. The people driven information system is a good match with its multiple self-governing small units which can adjust quickly and support the several local units. Yet, it can respond to the leader on an intermittent basis.

- The recommended geographical distribution is characterized as global (cf 20%)
- It could also be: multi domestic (cf 20%)
- When the organization has a group climate the geographical distribution should be global. The group climate is a pleasant place with low tension, but with low tolerance for change. The global geographical distribution builds upon the low tension with informal information sharing among the individuals as a information is needed.
- When the management style of top management is a leader type the geographical distribution should be multi domestic. The leader delegates freely and has a high tolerance for uncertainty with a limited need to know what is going on in detail. The multi domestic geographical distribution system is a good match with its multiple self-governing small units which can adjust quickly and support the several local units. Yet, it can respond to the leader on an intermittent basis.
- MEF CE's span of control should be narrow (cf 18%)
- It, too, at places should be wide (cf 11%)
- Since MEF CE has a nonroutine technology, it should have a narrow span of control.
- Incentives should be based on group results (cf 75%)
- It should also be based on individual results (cf 73%)
- With high equivocality, high uncertainty, and high environmental complexity incentives should be results based. When the masculinity is medium high incentives should be results based. When the individualism is medium low incentives should be on rewarding the group. When the organization has a group climate, incentives could be results based but with a group orientation. Incentives should be results based with a group orientation, when the technological routineness is low.
- With high equivocality, high uncertainty, and high environmental complexity incentives should be results based. When the masculinity is medium high incentives should be results based. Incentives could be results based with an individual orientation when management has a leadership style as a leader. Incentives should be results based with an individual orientation, when the technological routineness is low. With an analyzer with innovation strategy incentives should be based on an individual behavior.
- MEF CE should use media with high media richness (cf 97%)
- MEF CE should use professionalization as means for coordination and control (cf 100%)
- It should also use meetings as means for coordination and control (cf 98%)
- With a nonroutine technology MEF CE should obtain coordination and control via group meetings. Media with high richness and large amount of information should be used. When the environment of MEF CE has high equivocality, high uncertainty, and high complexity, coordination and control should be obtained through integrators and group meetings. The richness of the media should be high with a large amount of information. When the organization has a group climate, coordination should be obtained using integrators and group meetings. An organization with a group climate will likely have to process a large amount of

information and will need information media with high richness. When the organization has an analyzer with innovation strategy, coordination should be obtained using planning, direct supervision and meetings. If the management has a leadership style as a leader then the management will prefer coordinating and controlling using integrators and meetings.

Organizational Misfits

Organizational misfits compare the recommended organization with the current organization.

- The following organizational misfits are present: (cf 100%)
- Current and prescribed configuration do not match.
- Current and prescribed knowledge exchange structure do not match.
- Current and prescribed incentive structure do not match.
- Current and prescribed complexity do not match.
- Current and prescribed centralization do not match.
- Current and prescribed formalization do not match.
- Current and prescribed information system structure do not match.

Recommendations on Removing Organizational Misfits

- There following more detailed recommendations are suggested: (cf 100%)
- Consider decreasing the number of positions for which job descriptions are available.
- Consider allowing employees more latitude from standards.
- Consider having fewer rules and procedures put in writing.
- Top management should consider to control the execution of decisions more actively.

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APPENDIX I. RESPONSES TO INTERVIEW QUESTIONS

Doctrine-Concept Questions
The majority of the responses come from personnel at MCIOC, IWID, and DC I

#	Questions in **BOLD**, responses in normal font
1.)	**Can you describe the information environment?**
	collection of physical, cognitive, and informational (IIII)
	complex, widely used, cannot control - can achieve local superiority at the time of choosing
	sense-understand-act
	The Force - It is all around us (II)
	It is ill-informed to drop the term IO
	Look at MAGTF IO and MAGTF Fires doctrine
	Individuals, organizations, systems that collect, collate, process, store information
	Not just the technical, systems, organization, and individuals
	End state - affects how someone thinks and acts
2.)	**What are the functions of the information environment?**
	7 functions are a good start, but OPSEC should be added somehow. (IIII)
	7 functions (IIIIIIII)
	More than just protect the network - we leave a digital footprint everywhere
	Functions of Marine Aviation as a source…
3.)	**Who is responsible at the Service and Marine Air Ground Task Force (MAGTF) level for the functions in the information environment?**
	Service - DC I, MAGTF - CG (III)
	Service - DC I, MAGTF - MIG (IIII)
	Service - DC I, CD&I while the MAGTF is everyone (II)
	Service - DC I, PP&O, MARFORCYBER, MCCDC; MAGTF - FECC
	Not clarified; this is a 2-3-6 problem
4.)	**What resources/authorities do those responsible for information environment functions possess to execute those functions?**
	Authorities - OCO within MAGTF AO, Resources - people and equipment that can execute
	Facilities, equipment, COP
	Forecasting authorities problem

5.)	**What resources/authorities do those responsible for information environment functions lack to execute those functions?**
	Facilities funding, doctrinal shortfall, need a training and T&R modernization, MOS billet mismatches and inventory are a huge problem, NCR is outpacing the MEFs at this point
	We don't know yet. We will find out in the wargames.
	Not enough MISO in USMC, no MILDEC capacity, or signature management capacity
	Authorities are the largest hurdle, need more than just the tactical level authorities
	Social media authorities
6.)	**What is the function of the MEF Information Group (MIG)?**
	Remain deliberate and synchronized in planning
	Enhance timing and tempo advantage of the MEF in the IE through synchronization of staff and IRC efforts. The MEF CE could have accomplished this end state with the MEF staff if they were ever filled to T/O.
	MIG needed for faster pace in the IE, allows for rapidly changing supported/supporting command structure. MIG should review the composite warfare structure of the Navy to align structure to generate this tempo.
	There is no clear purpose
	Control IE Ops external to the DODIN - External effects only
	Better synchronize the 7 functions of the IE from an organization and systems perspective
	Purpose of the MIG is to fix the coordination problem of the IRCs
	It is a concept right now only! It is an effort to become an execution arm of tactical tasks. The MIG is best suited for tactical execution of external effects.
	Conduct current ops for IE Ops for the MEF. Command and control IE Ops forces.
	MIG should not plan up and out.
	Integrate IO - view 2d and 3rd order effects and advise the MEF
	Establish targeting objectives for the CG and staff in the IE.
	Unity of Command/effort of information as a warfighting function. The OCC (IE Ops COC/IWCC) clear IE fires! The FECC coordinates and nominates while the MIG executes. The MIG is the information Combat Element.
	Still figuring it out - probably take 2 years to validate or not validate the COE
	Coordinate IEO for the MAGTF (Integrate and execute)
	Combined arms integration of IE capabilities in support of the MAGTF
	Integrate, coordinate, deconflict function 7.
	Coordinate, integrate, and employ IE capabilities
	Plan and execute ops within the IE that are not kinetic
	Ensure ops in the physical environment are coordinated for proper information effects

	Coordinate among the 7 functions of the IE
	Owner of the assets, tasking authority in conjunction with the G-3
	Potential hurdle - another layer of Command (O-6)
	FOPS/COPS model
	MIG is a functional headquarters like the MACG. Its Bns are a team and the MIG provides their C2.
	We need to operationalize the MIG in phase 0.
	Synchronizer across the 6 functional capability areas
	MEF staffs are not 24-hour ops, the MIG should be
	Conduct IEO
	24/7 day on, stay on operations at the MIG (must build MARFOR component first)
	Operational Commander for Ops in the IE
	Execution of IEO and assessments
7.)	**What are the intended coordination points between the MIG and the MEF CE?**
	MIG phase 0, focused outward w/ assigned MARFOR
	MIG COC is subordinate to the MEF COC
	Targeting Boards and working groups
	Direct tasking from the MEF, LNOs are key here, reqts exchange, synch meetings
	Need COPS/FOPS swim lanes
	IO working group and targeting series
8.)	**What are the intended integration points between the MIG and the subordinate elements of the MAGTF? Please describe the integration points both in planning and execution.**
	MIG is tasked by the MEF
	Still a tie in to the NSA
	Not clarified when down range, Is the MIG a FGE? Garrison - Action Officer?
9.)	**How is the MIG intended to tie-in to National-level, Combatant Command, and Service level capabilities? Where specifically are those touch points, authorizations, and requests located?**
	Like MCIOC, building report with those units tasked in the COE.
	MIG
	MARFORs
	Clearance - Access
	MIG tasked to a MARFOR in garrison
	standard through the Combatant Command

10.)	**Where do the MIG and the MEF CE Staff responsibilities overlap or touch?**
	Operations
	Clean cut
	Planning/huge overlap here - not resolved
11.)	**Where does natural conflict or potential conflict exist between the MIG and other members of the MEF CE Staff?**
	Planning/huge overlap here - not resolved
12.)	**How would you suggest solving these potential conflict areas?**
	Training Marines better, define in doctrine
	Discussion - USMC did it for structure, but not process
13.)	**In your view, what is the best way to coordinate planning and execution of IEOs, in general, between the MIG and the G-3**
	The MIG needs to be fully integrated with the MEF CE
	The MIG is complimentary and adds more capacity
	Not sure who the lead should be, but would lead toward keeping existing doctrine
	Near real-time running estimate
14.)	**In your view, what is the best way to coordinate function one in the MAGTF IEO Concept of Employment (COE) between the MIG and the MEF G-6?**
	MEF - Strategic and PLANS, MIG - future operations, Comm Bn - Current Operations
	FECC falls under the IWCC
15.)	**In your view, what is the best way to coordinate function two in the MAGTF IEO COE between the MIG and the MEF G-2?**
	Same type of COP
	Near-term - MIG, far-term - G-2 IPB
	IPB owns it - IE
16.)	**In your view, what is the best way to coordinate functions three through six in the MAGTF IEO COE between the MIG and the Fires and Effects Coordination Cell (FECC)?**
	No true responses given

17.)	**Outside of the MIG, does anyone else share in responsibility for function seven of the MAGTF IEO COE?**
	Every Marine
	Shared among all IEO players
	G-3
18.)	**In your view, who specifically takes the lead during the planning phase of an operation with regards to IEO? Same question regarding the execution phase?**
	IWCC for information, lethal and non-lethal cannot be separate
	G-3, G-5 in planning; MIG in execution
	The MIG owns both
	Planning - G-3 or G-5 and the MIG supports; execution - G-3 and MIG supports
19.)	**What do you see as the support chain for IEO? (Example: Communications control hierarchy from Combatant Command to CYBERCOM support, service or joint level, to G-6 in the AO)**
	HHQ tie-in to the various staff sections
20.)	**Are there any other future concepts pending to assist the Operating Forces with understanding the IE and IEO? If so, what are they, and how will they help?**
	DOTMLPF cycle for EW right now
	2019 wargaming and experimentation
	2019 Pacific Blitz
	MCWL - 2019
	SIGMAN functional concept
	Joint Concepts for Operating in the IE

MEF Questions

The majority of the responses come from personnel at I MEF CE and II MEF CE

#	Questions in **BOLD**, responses in normal font
1.)	**At the Marine Expeditionary Force (MEF) Command Element (CE), who is currently responsible for planning Information Environment Operations (IEOs)?**
	The MEF CG, then the G-3, FECC, Lead IO Planner
	FECC (IIIIII)
	Shared stewardship between FECC and other primary staff (G-2, G-6), MIG doesn't exist yet
	Distributed responsibility; G-6 is function 1, 2, and 7; FECC own function 3; Comm Strat owns function 4, and 5 and 6 are owned by the S-3 from the CG's guidance
	MEF CE, ultimately the G-3.
	TIO in the FECC
	FECC while the MIG possesses the money and the advocacy
	Nobody, some own pieces of it
	G-3, G-2, FECC, G-6, COMMSTRAT
	MEF, G-3, FECC
	SAW graduates with input from all staff sections
	MIG
	CG, G-5, G-3 (II)
	Operational units should participate because they are responsible for execution
	We all have a role to play at our level
	The MEF Tasks, the MIG executes
	CG, the MIG in concept, but everyone right now
	G-3 (II)
	The MIG
2.)	**At the MEF CE, what other actors are involved in planning IEOs?**
	G-2, G-3 Cops/FOPs/Plans, G-4, G-5, G-6 (Spectrum, DCO), G-9, IRC SMEs, ATFP, SJA, COMMSTRAT
	COMMSTRAT, MIG, G-2, G-6 (III)
	FECC, G-2, G-6, G-9, COMMSTRAT
	other TIOs, FECC, other staff sections lack an appreciation for IE Ops
	MAW, MIG units
	G-2, G-3, G-6, thoughtful intel support to the IE is needed
	MIG Battalions
	All of staff process
	Intel, PAO, FAO, Aviation
	G-2 and G-6

	All MIG Battalions
	STO planner
	G-2, G-3, G-6, PAO, all IRCs, air shop (G-3) MIG has LNO to the FECC
	PAO, G-9
3.)	**At the MEF CE, what are the current IEO integration points (meetings, cells, boards) to plan and execute IEOs?**
	Targeting Series B2C2WGs (IIIIIIIIIIIII)
	ESG, I&I WG, EMSO WG, IEO WG - Feeds Targeting Board
	B2C2WGs, DCO synchs, need a mitigation board
	COMMCON provides reporting, control, and feedback
	Targeting cycle, but other G-2 and G-6 meetings just as important to feed the targeting cycle (Ex: MCCC meetings).
	B2C2WGs, but this is not enough! The is no nodal analysis from sensor to target in these working groups, which is why integration suffers so heavily. Another item that would help would be actual time between working groups to enhance the product.
	CEWCC is a nascent process outmatched by the pace of the information environment
	Need a MIG entity that moves faster under the Commander's intent - CG decision takes more time because of layers.
	Should the MIG become a chair for the IW WG?
	Assured C2 - SYSCON to MCCC
	There is more to IE Ops than targeting
	IO working group - FECC chairs
	Need an IO rep when Design starts - placement and access issue
4.)	**At the MEF CE, who currently leads each of these IEO integration points?**
	MEF Staff (IIIII)
	Planning remains at the MEF Staff level, MIG battle tracks and is a liaison to MEF CE Staff
	FECC (IIIIIII)
	COMMSTRAT plays a role too
	FECC is the lead for lethal and non-lethal fires integration
	The Communications Synchronization WG is chaired by the CoS, IWCC representation required
	MIG should push to own the OIE working group

5.)	**At the MEF CE, what are the frequency and duration of each of these integration points?**
	Daily (IIIIIII)
	Daily and On-call as needed (II)
	IAW battle rhythm
6.)	**Can you describe how many personnel come from each unit/agency to participate in these integration points?**
	5 dedicated from COMMSTRAT
	5 from Radio Bn
	Broad, depending on participating section/unit
	MISO/COMMSTRAT work hand in hand - these two should not be scared of this
	FOPs planner, tech SPE, spectrum Mgt (from the G-6)
7.)	**How much time does it take for each person/unit/agency to participate and prepare for these integration points compared to other duties that they must perform?**
	On average, 50%, they have other jobs
	100%
8.)	**How do these integration points tie into the decision-making process for the Main operational planning team (OPT) and ultimately the Commanding General?**
	Targeting Board (IIIIIIII)
	CUB and the Targeting and Effects Board
	4 Touch points: CUB, Plans Board (what we're doing next), Targeting Board (How we get it done), Assessments Board (How we're doing)
	Deliberate design battle rhythm
	That's not the point - now a MIG Commander has the ear of the CO when it comes to IE Ops
	Through the MCCC - G-6
	The MIG OIE CONOPS
	IO working group - Targeting Working Group - Targeting Board
	CUB, Planner's Huddle, Targeting Board, Commander's Huddle
	Targeting Board, one on one with the CG
9.)	**When the MEF Information Group (MIG) is full operations capable (FOC), how do you see the responsibilities for IEOs changing?**
	They will not change, except to be enhanced by MIG personnel
	They will not change, MEF focused on plans
	MIG will have effect on the capabilities of the external environment

	MIG concept works well for MISO, some EW, tactical OCO, DCO-RA. Not STO or DCO (some caveats)
	Right now, there are more points of friction than clarity
	MIG needs to posture to C2 IEO forces. Posture needs to provide feedback to the MEF
	The COE tasks are not possible - TMBCS does not exist! So, how do we lump information together from the IE and fuse it to make intelligence?
	MIG CO manages current operations of fires units in the MIG. The MIG will also deconflict with outside agencies.
	G-3/G-5/FECC conducts PLANs and FOPS, MIG conducts current ops in the IE
	More conflicted, duplication of efforts because the MIG is a redundant organization
	FECC has purpose. Replace some FECC operations and add capacity
	More LNOs, more touch points with the MSCs. MIG owns 24 hours and in (COPS) and short-term assessments.
	Execution and planning occurs at the MEF, but execution goes to the MSC, spillovers should go to the MIG, particularly concerning OIE.
	Now - lots that have input, but no one that has the full visibility of the IE - we must measure our success in total
	Intel lines of demarcation are needed, Adversary to Intel, Coalition and Friendly for MIG perhaps
	Keep IE at the lowest level of classification possible
	MIG/IWCC handling all of it with liaisons, execution is probably most likely though
	Not much, other than more capability and a planner tied into the MIG
	Dets to MEUs will change - augmented with more IO planners, etc…
	MIG planners within O-PLAN cells
	No change, FECC owns PLANS, MIG provides real-time monitoring and execution
	See MIG actually not working
10.)	**When the MIG is FOC, how do you see the integration points changing?**
	Fewer or the feeder WGs (MIG may take some of those over) - Tgt WG and Board still MEF level
	They won't (II)
	No change, but all will get better collectively
	MEF processes continue as plans processes only. The plan is handed over for detailed planning to the MIG for IE Ops.
	squishy/sticky - the handoff between current and future operations
	Integration points will unfortunately increase due to unneeded redundancy
	EMSO, I&I, IE Ops belong to the MIG
	DCO - Intel integration needs to get better through the MIG

	Transition from FOPS to COPS
	Integration points will remain the same, particularly by the MIG. MIG needs to tie into other MSCs as well.
	Natural evolution
	MIG CO more responsibilities for IW, wants approvals for EA
11.)	**When the MIG is FOC, where do you anticipate the MIG and the MEF CE Staff responsibilities will overlap or touch?**
	Natural overlap in plans, FOPS, and COPS planning
	They should not
	OST comes to the CER from COMMSTRAT, media dealings is a COPS (MIG) function
	Yes, inherent linkages exist, manage and oversight links, MIG external facing
	This question depends on the tactical task
	In the first couple of years - MIG will have current ops - swim lanes awfully important
	MIG having touch points beyond the MEF CE are awfully problematic
	MIG participates in the planning. Also, when fires deconfliction is needed by way of dynamic fires, coordination with the FECC is required.
	Where O-6 level staff members at the CE are advocates for the MIG Battalions
	Intel, Comm, and Fires
	PLANS and FOPS with the FECC, COPS with the G-33
	Touch when it comes to planning, MIG provides feedback in the planning process
	No more overlap expected then what currently exists between the MEF CE and the MSCs.
	MEF should be focused on the deep battle. The real question is, what could the G-2 and G-6 do for the deep battle that the cannot do now?
	Would like to see a more robust assessment and analysis cell. How do we actually impact the local environment?
	Authorities on a given network - who is on what network?
	Command authorities versus network authorities - who has what authority?
	MIG plans, FECC synchronize the plan with kinetic fires
	Touchpoints via targeting working group and cycle
12.)	**When the MIG is FOC, where do you think natural conflict or potential conflict will exist between the MIG and other members of the MEF CE Staff?**
	Comm Bn - DCO-IDM, G-6
	Intel support to OIE
	COMMSTRAT
	Operations perspective with FECC and MIG

	Employment of the Communication Battalion - will be resolved at O-6 level through coordination
	Definition problems here. Defining swim lanes is crucial!
	Between the MIG and the G-2, G-3 FECC, G-6, and the COMMSTRAT Officer. (III)
	All cyber, DODIN still reflects, Comm Bn in the collection business also. DCO-Cyber in Annex B and C too.
	MIG has PIRs they want answered. MIG is an extra layer.
	DCO
	Where new capabilities exist against an old solution set
	Dynamic re-tasking during targeting in the IE
	Access to information - classification level of IE Ops
	FECC to MIG, G-6 to Comm Bn to MIG, who has control of taskings?
	For the MIG to gain responsibility, someone has to be willing to give some up….
	Where every other warfighting function exists. Information touches them all, so this is inevitable.
	MIG-G-6-Comm Bn
	Authority of the network - Combatant Commander vs MARFORCYBER - swim lane issue
	MCCOG - G-6 - MIG,
	Key staff points between G-2, G-3, and G-6
	Is the MIG CO and Commander or a Staff Officer?
13.)	**When the MIG is FOC, how would you suggest solving these potential conflict areas?**
	Identify processes up front, full understanding of processes across the board, identify swim lanes
	Do not change the relationships between the MIG Battalions and the MEF CE Staff sections
	Procedures in place so we understand where the lanes are (swim lanes)
	Make the MIG their own MSC. Don't they now own battlespace?
	Clear swim lanes
	Personal relationships
	Disclosure Officer, better processing of information to keep at owest possible classification level
	Natural habitual relationships of the MIG Battalions to MEF CE staff members can and should be maintained and improved by being operationally under the MIG, but now Battalions will support each other better as well (Intel collection for DCO).
	Clear roles and responsibilities
	MIG lockstep with FECC priorities and G-3 priorities
	Liaison from the MIG at the FECC (Major, 8834 or 0550)

14.)	**When the MIG is FOC, what do you think is the best way to coordinate planning and execution of IEOs, in general, between the MIG and the G-3?**
	MIG will be primarily responsible for COPS in the IE. Still need to determine the correct FOPS handoff point.
	SEPARATE - about Comm Strat - Plans, R&A at MEF CE, task production to MIG
	The FECC plans. MIG CO to G-3, MIG S-3 to G-3 FECC
	The IEOCC is in GS. The MEF owns the planning process, but the MIG heavily assists in planning and conducts current operations.
	Formal G-5 run OPTs, MIG participates as does the FECC, MIG executes and clears
	G-3 tasks and deconflicts non-kinetic fires. FECC now does planning and current operations
	IDK yet (III)
	Planning and COPS separation
	Follow up with FECC, Planning is shared, MIG will operate and execute
	G-3 plans, MIG executes
	Anticipate the deep fight in the IE, cannot do this now because the MEF CE staff is looking 5 inches in front of their face
	FECC - plan effect and deconflict with kinetic targeting, MIG - conducts the how
	FECC is a pacing item, owns commander's targeting objectives
	MIG executes what the FECC plans
15.)	**When the MIG is FOC, what do you think is the best way to coordinate function one in the MAGTF IEO Concept of Employment (COE) between the MIG and the MEF G-6?**
	G-6 has an ownership function
	On-call relationship between the EMSO WG and Targeting Board
	MEF handles immediate actions - has access to CG off cycle if need be
	This is a G-6 responsibility. G-6 coordinates in real-time - extends to DODIN and DCO, whether active or passive and hunt.
	Swim lanes - MIG = Doers. G-6 needs to be less down and in.
	G-6 has COMMCON, G-6 directs network change, Comm Bn operates under a CONOP designed by the MIG. This CONOP will offer better synchronization.
	Only one can be responsible here. That is the G-6.
	G-6 should not conduct current operations, the Comm Bn should handle those.
	MIG is the action arm to implement Network Assurance
	G-6 lead, MIG provides support
	Anticipate the deep fight in the IE, cannot do this now because the MEF CE staff is looking 5 inches in front of their face

	The creation of the battlespace belongs to the G-6 - DODIN Operations
	The MIG tasks the DCO-IDM Co through the CDOC.
	MIG CO should hold authority for dynamic targeting in Cyberspace
	MIG CO should have purview over the DCO-IDM but must be reconciled with standard cyber hygiene. Hunt is the job of DCO, and thus the MIG
	MCCC LNO should operate with the CDOC, which falls under the MIG COC - chat could also be used to deconflict
	MCCC, MIG COC, Comm Bn SYSCON liaisons and chat
	who gets the first bite of the apple?
16.)	**When the MIG is FOC, what do you think is the best way to coordinate function two in the MAGTF IEO COE between the MIG and the MEF G-2?**
	MIG IWCC should integrate the consolidated picture. This takes everyone however (2, 3, 6, Comm, Intel, Radio Bns - Ex: Bug splat analysis)
	Comm Bn can write it owns scripts and conduct the HUNT mission.
	G-2 owns the intel cycle. G-2 plans and the MSEs execute. MIG should augment the G-2 planners.
	Coordinate by, with, and through the IOC, OCAC, and Comm Bn
	Intel Bn - dedicated support team to intel support network defense (ISND) - attach to Comm Battalion when deployed
	Is it going outside of the MEF collection plan? If yes, goes to the targeting process for staffing
	G-2 will help with better questions, MIG is the action arm
	G-2 develops collection plan ISO G-3 operation, MIG is a collector and will support
	Anticipate the deep fight in the IE, cannot do this now because the MEF CE staff is looking 5 inches in front of their face
	G-2 still gets Intel/Radio Bns, MIG S-2 honchos the IE appendix to the IPB
	MIG focuses on IE, KLEs
	G-2 supports the CG's requirements specifically, provides support to the MSCs
	MIG - feeding an informing the MEF G-3, additionally supporting the MSEs and the IWCC
	SOP development, wargaming is crucial
	MIG needs more foundational information - shared resources
	B2C2WGs
	Combined information overlay
	MIG conducts COP monitoring, G-2 provides more detail to the IPB

17.)	**When the MIG is FOC, what do you think is the best way to coordinate functions three through six in the MAGTF IEO COE between the MIG and the Fires and Effects Coordination Cell (FECC)?**
	Planning versus execution
	MIG COC does C2 with very little FOPs.
	MIG should augment the natural staff sections when deployed.
	MIG is the contact point, FECC leads for deception, COMMSTRAT leads for inform, MISO leads for influence
	Separation between COPS and PLANS
	MIG should hold the authorities, personnel, and resources; MEF staff will plan
	MIG participates in the planning process, MIG executes as assigned
	This is not as simple as a FOPS/COPS separation
	G-3 plans, but MIG needs to be tied in at some point - handoff to MIG eventually
	FECC - set and deconflict goals, MIG gives you the how
	An authorities question - 3 star will own them, FECC owns Functions 3-6, MIG supports them
	Have to co-locate MIG COC with FECC
18.)	**When the MIG is FOC, who else will share in responsibility for function seven of the MAGTF IEO COE?**
	MIG alone
	everyone
	C2, MIG owns this function 100%
	All units that have an IE Ops capability
	MIG, IEO of MSCs, MEF CE SMEs
	MIG COC executes - influence from SWO, G-6, G-2
	Depends on force generation requirements for subordinate MSCs or other MAGTFs. Cmd Function.
19.)	**When the MIG is FOC, who should take the lead during the planning phase of an operation with regards to IEO? Same question regarding the execution phase?**
	FECC - Planning, MIG - Execution (IIIIIIIIII)
	MEF plans, MIG and other MSCs execute current operations
	Plans at MEF CE level, shared and synchronized execution
	MEF is the lead for both
	Planning - FECC plans, MIG executes IW mission and clears IW fires
	Plans - MEF Staff with MIG support. Execution depends on who owns the unit/asset.
	MIG is the lead for the coordination role. G-2,G-3,G-6 may have individual leads.

	Planning is concurrent at all levels. Both the MIG and MEF Staff have a slightly different role to play, but both plan and execute in some form. Focus is the question here.
	Planning - MIG and FECC are co-chairs in the future, MIG executes
	Both by the MIG - but the FECC should provide criteria and guidance
	FECC - Planning, MIG - current ops
20.)	**What concerns do you have regarding integrating the MIG into future IEOs? Do you have recommendations to mitigate those concerns?**
	Understanding of the full nuance of OIE - lack of education at MIG - they'll know enough to be dangerous
	Too much, too soon, and it'll fail
	Risk taking mature structure away from the where it is, ultimately making the MEF less capable
	Lack of good tools for MIG to succeed
	Missing the right mix of folks (MOS structure)
	How does this concept fit into the joint environment?
	A duplication of efforts between the MEF CE and the MIG
	No single unit can or should own IE Ops
	MIG does not possess the depth of expertise or the right T/O to manage DODIN or DCO
	MIG is an immature organization with no understanding of best practices - they should wait for employment until they have a full T/O and something to offer.
	Marine Corps education and training does not support the integration of IRCs or IW
	2025 is not a realistic goal without some type of recruiting incentives, manpower model has to change for a minimum-the cyber MOSs.
	We are fixing the wrong problem. This issue is not about synchronization, it is more about efficiency. We have education and staffing problems that cause most of our issues with IE ops. The MIG cannot fix this problem.
	MIG breaks a system that already works well (communications perspective). This is less of a problem if the MIG focus is simply external.
	MIG probably won't know what to do at first and will attempt to fill in roles in the MEF CE staff.
	The MIG CANNOT conduct phase 0 operations outside of the MEF
	IBMCS is not achievable any time soon. We lack an IE Ops COP.
	Training and Education of the IE Ops force. It is woefully inadequate.
	Resistance to change
	Talent Management is incredibly poor
	Top down, integrate, single battle - Does not exist in the IE - We need a commander to be responsible for executing on a 24-hour cycle.
	10th Marine role is relevant here.

	Resource the MIG appropriately to conduct the mission we are asking it to conduct.
	No change. MIG is correct!
	T/O probably not right yet
	Duplication instead of efforts/planning
	MIG should augment vice gain its own responsibilities.
	Education and awareness - Field grade and SNCOs do not understand IEO!
	Credibility - COE and T/O mismatch, also don't have EMSO and Cyber folks.
	Scope, scale, and Bandwidth
	Education - Needs a full court press, Enlisted and Officer
	IEO and IW is a whole of MAGTF problem. The MIG is simply an integrator, so perception
	Talent Management - People, education, and training need to be the focus
	Without clear roles and guidance, MIG will be perceived as an outsider
	Pulling IO personnel from other random MOSs to make them. We need true professionals.
	T/O is wrong for the MIG
	Require a better line of demarcation between info and intelligence
	Do authorities relate to classification?
	The targeting cycle does not necessarily line up with the IE. Different timelines due to different processes, different authorities, different feedback loops
	For this to work, the MIG needs trust, Cdr's intent, and freedom of execution within it
	There is no lawyer at the MIG or FECC for that matter. This is a large problem. IE Ops are authorities driven.
	There is no training pipeline for MIG personnel
	There is no infrastructure to facilitate training
	Training the right SMEs
	Hurts personnel for promotion - Perhaps look at unrestricted officers as a COA
	Manpower takes structure - can't take responsibility to plan/execute IEO from the FECC
	MIG function (much like the ACE) is to fight their guidance given from the MEF
	How do we groom the MIG CO?
	Cannot repeat the same function as the FECC - redundant
	We need lawyers at MIG and FECC
	We need to better define the COPS/FOPS transition - specificity is key
	Education, Training, and Talent Management are huge concerns
	IE ops needs extended to the entirety of the MAGTF, MIG is a good start, but cannot stop there.
	Managing Talent (reutilization tours, planners built into all level of the MAGTF)
	Training pipeline is woefully inadequate (relies on EWTGs)
	Non-kinetic effects don't normally adapt well to the ATO

	Preponderance of IO is activities and not just fires (change in assessment over time)
	IEOs should be thought of as more maneuvers than fires. Need people, intel, tactics, equip.
	Does the MIG violate the single battle concept?
	Soup up the FECC
21.)	**If there were not yet a MIG decision, how would you attack the MOC problem in the information environment? (Basically, a redo)**
	Create an IW Battalion construct, but its own MSC (outside of the CE)
	Begin with a MOC floor OIE COPS cell before committing to MIG structure to fall down on COPS
	G-39 concept works well, plus up capabilities are MEF CE and MSCs - No MIG
	MIG is not the solution!
	1.) MIG C2s IO forces. 2.) MIG deploys MIG capabilities for FGEs (Ex: MEU, SPMAGTF), 3.) IE Ops tasking order.
	No MIG. IW Battalion under MHG would have been a better method. MEF CE needs augmented staff, or at least a T/O staff to task-control-interface with IW Battalion.
	Plus up the MIG like it is now, but the intent is to become a force provider for the MEF staff for deployments and operations.
	MIG, but keep the Scarlet and Gold COA personnel to further develop and define processes
	MEF CE should be manned properly first for IEO, then evaluate, then determine if new structure is required.
	MIG should be its own element of the MAGTF with a CG, MHG component stays in place
	IWCC would be in the FECC
	All COMMSTRAT personnel at the MIG with the exception of some planners at each MSC and the MEF
	Build the whole concept first, allocate funding to infrastructure, training, etc…. And then build the MIG. The MIGs is the right idea, the roll-out is problematic.
	Add the capability to the FECC instead - still increases speed.
	Rewrite targeting doctrine, non-kinetic extremely difficult, but connects to everything
	8834 education - bucket with a hole, pulling the plug, all falls out the bottom
	MIG cannot operate outside of the MEF
	How do we build the right MIG CO?
	We need to professionalize the IO community
	Build a 24/7 IE component tied into MARFORs now
	MSTP, EOTG, TTECG - need more IO capacity

	Simply plus up the MEF CE staff to full capacity in IO billets; even add additional capacity if required, but not a new organization; MIG COC belongs to the FECC - COPS/FOPS would exist inside of it; this would give the MEF better integration of efforts.
22.)	**Do you believe the MIG was created to generate tempo in the information environment that the current targeting cycle could not take advantage of?**
	No, the targeting cycle is not the problem. Dynamic targeting works. Authorities are the issue with tempo.
	The MIG can certainly help here. So could an augmented watch floor in COPs with IE Ops folks.
	True, but addition of the MIG actually hinders the fix, not helps it. Instead, build IRC capability into the Battalion with adequate planning capabilities. MIG/MHG does C2.
	YES
	Yes, need a lawyer to generate tempo, matrices run by the lawyer in advance and as dynamic targeting pops up
	We are not very cognizant of our ability to defend the MEF in the IE, the MIG could help here substantially.
	Clearances are a huge problem
23.)	**Other benefits of the MIG?**
	Provides resources - much like the MACG
	MAGTF better integrated in a combined arms manner with the MIG - if not, we've misappropriated our resources.
	The litmus test is: Does the MIG COC better enable the MEF to control tempo in the IE to outpace the enemy's decision-making cycle?
	SPEED
	Creating the MIG helps to change the culture of the MEF with more awareness for IO
24.)	**Phase 0 suggestion**
	Not manned sufficiently to conduct 24-hour operations, adjudication through Joint world a must before this becomes a reality.
	Must be integrated into the joint force
25.)	**MIG provides dets to other MAGTFs/other MSCs**
	Built to conduct a staff function and C2 own forces, would require augmented manning
	COMMSTRAT needs to det to other MSCs, but there should be a 4500 in the MIG S-3

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